Computer Very

PT7cuts Costs FERRANT

Computer Systems

"克莱莱士

Thursday, March 1, 1984

MoD gaffe lets in copying safeguard

by Philip Hunter THE Ministry of Defence has made an embarrassing mistake by failing to notice a patent taken out early last year oo a device designed to prevent tape-to-tape copying of

software. The Ministry slapped an em hargo on an almost identical product patented late last year, preventing it from being sold or toarketed for an indefinite period.

The product which escaped the Ministry's notice was developed by Systembridge of Upminster, which claims that its device has not yet been cracked by a pirate.

Systembridge director Jack in principle the same as the one recently embargood by the Ministry of Defence. "But they are different in detail," he says.

Perhaps the detailed differences account for the one being emharged and the other parks.

goed, and the other not, suggests
Hawkins.

The embargoed product was developed by JLC Data of Barnsley,
which filed a patent on it late last
year in the hope of cashing io on
the industry's dire need for a software protection device that works. But the patents office decided to refer the product to the Ministry of Defence under Clause 22 of the 1977 Patents Act, under which inormation about a patent of potential threat to national security can be withheld from the public.
Lord Lloyd of Kilgerran, a

patents lawyer and hon secretary of Pitcom, the Parliamentary In-formation Technology Committee, says the Ministry probably decided to embargo the JLC product bepeople in some way to access classified information from a computer terminal. But if mother similar product had already beeo patented, then the Ministry was

wasting its time.

Meanwhile JLC Data's Jim Lamant, who invented the device, feels hard done by because he is barred from selling or marketing

US manufacturer Control Data (CDC) is closing its mainframe

Plato training system service to the

UK to concentrate on microcom-

puter-based Plato packages.

A Cyber 720 mainframe serving users across Burope is going back to the US and users are expected to

be on microcomputers from UK firm Systime, which Control Data

All staff have been offered jobs

in the company,
"We cow have better Platn products to the form of standalone

partly owns, by the summer.

by John Kavanegh US, manufacturer



Sinclair expands as Timex quits

by Nuala Moran snd Jahn Kavanagh

SINCLAIR Research is to look farther afield for sales as its US manufacturer and distributor, watch manufacturer Timex, bows out of the home computer market.

Timex was put off by last year's savage price wars, which also forced giant Texas Instruments and toy company Mattel out of the hame computer business. Announcing the decision, limex vice-president for sales and

marketing C. Jacobi ssys:
"Analysis of the home computer
market shows that 1984 will be
mother year of turnoll. We believe the value of ioventories will

decline, making it difficult to make a reasonable profit."

But Sinclair had already announced plans to "dramatically enhance" its sales outside the US and UK, which run at 60% of its total.

says: "We understand Timex' reasons. It is a licensee of our technology, so we can't dictate how it uses it."

She adds that Sinclair has no plans to take over marketing the ZX81 or the Spectrum in the US and that this will oot affect plans to market the QL in North America.

Timex dld not have any rights to the QL but it will continue to manufacture computers for Sin-clair in the UK at its Dundee fac-

tory, Jacobi says Timex will honour guarantees and do repairs and continue to supply parts to other companies in the industry.

Demand for the QL overtook

supplies only two weeks after it was launched in mid-January, Sinclair blamed a higher than expected demand for this. Would-be QL owners are oow receiving let-

ters saying the promised 28-day delivery dates will not be met and the Advertising Standards Authority is already investigating

Sinclair's expansion plans in-elude the licensing of companies in South America, Africa and Asia to build its products, which are sold through distributors in some 50 countries.

two top people to develop further the markets in France and West

managers will have none of the trappings of a big office. They will organise their own time to manage the strategic development of Sin-clair in those countries."

Sinclair also wants an export

y Keith Holder

limbed a respectable 60%.

One Plato staff member says there are 10 mainfraine users in the UK. Furness says there are more, al-though most have been moving to

microcomputers anyway. UK revenues from Plato grew 50% last year and will grow by another 50% in 1984, Furness

vice will continue in the US, where

communications costs are cheaper. Some UK customers will be linked

to the US until the summer, when

all the mainframe facilities become

available on microcomputers.

says. "We are exceeding our targets," systems," says sales manager Peter Furness. "In addition this is in line with "There's now a general aware-

the way the bureau business is going.

"And Buropean companies are the UK, and people are moving more receptive than the US to the out of the pilot project stage." going.

"And Buropean companies are idea of distributed computing Furness asserts. "More people approach us these

through micros.' Furness says the mainframe ser-

CDC shuts mainframe | Peripheral sales give Plato to favour micros IBM a 90% boost

IBM peripherals sales leapt nearly 90% last year, while office systems.

These figures come from the company's report for 1983, which breaks down last year's \$40,2 bil-

Peripherals sales, reckoned to have been boosted by the success of the 3380 high capacity discurrent, for which no real competitions and the largest than largest the largest than largest the largest than largest t

drive, for which no real competition exists yet, were the largest
single contributor, totalling \$10,74
billion.

Office systems, which include
workstations and the IBM-PC and
PC XT made \$8.03 billion while
processors occupied second place
with sales of \$10.74 billion. The
latter showed only a \$.8% increase
over the year.

Not everything was at room for

Not everything was so rosy for IBM, however, and revenue from rentals showed a marked decrease. This was most severe in the

processors market, dropping 28.4%, and accounts for the poor

increase in this sector.

Reotals of peripherals were hit too, with revenues down 11% to \$4.78 billion. The US rental pool showed less shrinkage than elsewhere, on aver-age down 13.5%.

Other categories which showed gains were program products, up almost 36%, and federal systems operations, which operate only in

the US.

This is the first time IBM has given such a detailed breakdown on industry sectors because, says a spokesman, "such data was not required before!

Training, testing and other business," sayed at the same rate as the previous year, and are largely confined to the US.

Other facts brought out in the report include a 13% gain in the pumber of employees.

Taxmen vote in technology deal

THE taxmeo have voted to accept the new technology agreement compulsory redundancies as s result of the computerisation of

And 400 suspended staff re-turned to duty on Wednesday after 66.4% of the Revenue staff voted

A spokesman for the taxmen's union, the Inland Revenue Staff Federation (IRSF) denied that the 30% against the agreement was higher than expected. "There was some stirring on the broad Left in favour of not aigning, but the resuit is quite clear. Accordingly the executive committee decided that the new technology agreement should be signed."

The 400 or so stuff in the West Midlands who were "temporarily relieved from duty" for refusing to operate VDUs voted 357 to 25 to

ment the Revenue has agreed a spread the benefits of computeristion to the staff. A joint study of "self determination" will be set up to give staff the chance to decide

on their own working patterns.

But the union also had to agree to accept 4,000 job losses as a resuit of the Psye computerisation before 1988. The Revenue said this will be done by a combination of "natural wastage and transfer"

This agreement will have repercussions for other Civil Service unions seeking new technologiagreements. They could also be affected by a court ruling against the IRSF which could be used by the government in future dispute The IRSF took the Revenue to

court, because it said, the use d computers without a new technology agreement broke the taxmen terms of employment. But hir Justice Walton said that the nature of their jobs had not been changed, only the way the jobs were done.

Court blocks Fast sub

by Genrge Black TOP US software house McCor-mack and Dodge has suffered a setback in its attempt to revive an accounting system which was hit by a court injunction.

It intended to replace the Past report writer, the subject of the injunction, with an alternative package from Software International. But now a court in Woshngton has blocked this move. The court says it will re-hear the

case oo March 12 and give a decialon on April 10. But meanwhile McCormack and Dodge cannot

use the Software International

The case began with an injunc tion by the court preventing McCormack selling the report writer outside the US. Its suther; ABC Management Systems, said it had only agreed with McCormack

ABC says it has instructed lawy-Computing Services, the UK distributor of McCormack's lines. cial systems. But last week RTL said it had received no writ from

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McHugh diversifies his



own for ioternal use and semicon-

ductor maker Motorola is widly

tipped to start a similar production facility in East Kilbride.

Dr George Mathewson, chief executive of the Scottish Development Agency (SDA), says: "We believe that this is the largest hward investment ever in Scot-

NatSemi ia to get a government

financial package but officials of the SDA and of company refused

to put s total figure to government

B? confessed: "We pass timing information to CHAPC from the

PSS system clock in Rugby. We

though: CHAPS only interrogated

B' dismissed the error so "one of those teething problems that can afflict any oew system", and added, "it was quickly corrected".

Jim Reeves, assistant manager of the CHAPS project minimised the fault's significance. "BT had a

problem, but the banks have procedures to handle that sort of

thing and not everybody was affected," he said.

CHAPS, the new Clearing

House Antoonsted Payment

System, fsiled on February 29 be-

cause British Telecoon forgot that

The system, which came into operation amidst loud controversy last month, uses British Telecom's Packet Switch Stream data com-

munications network, PSS, to pass

payment transactions between the

clearing, or settlement banks. The

system falled because those mes-sages emerged from PSS disted March 1.

An embarrassed spokesman for

Greenock gets boost

spend £100 million on its Green-ock factory to establish a world first for microprocessor manufac-

ture and create 800 new UK jobs

on top of 200 it has already created.

The company aims to be the first to mass produce its micros oo six incb wsfers — a technique which will allow it to produce

more chips at a cheaper cost per unit. And National Semicooductor

(NatSemi) will double the size of the nock factory to 325,000 so

ft and allow the company to treble its current ½ million a year pro-

Liew Aviss, NatSemi support

services manager, says: "We are the advanced guard. Only Intel is

duction of wafers.

NATIONAL Semicooductor is to spend £100 million on its Green-ock factory to establish a world aubstantial." IBM produces its

1984 is a leap year.

OEMs: a guide through How computers helped



Inward investment ever in Scot-land for a single project, and that it is probably the largest for the

In small to medium size out of companies (see page 2).

The aurvey finds that the



will he the basis of most of the UK's electronic funds transfer systems in the future. CHAPS uses a closed user group on the net-

payments had merely been de layed, and insisted: "None of our Barelaya Bank spokesman "The central switching did to have been told to get itself "a more expensive diary" by irritated CHAPS officials, when the system go in the morning but we have a contingency. Wa'd rather not say

Skill shortage

micros back

nationwide survey in 1983 of 1,200

factories by the PSI which showed

that nearly half the factories in the UK are using, or planning to use, microelectronics in their products

or in their production processes. This is an increase of 20% com-

pared with two years ago.
Only one factory in 10 is using

microelectronics in its products whereas more than four factories

n 10 use them in processes. Bu

Northcott says a lot of these users

British Telecom's PSS network

■ Danald Kennett adda: Reeves made a positive virtue

reverted to the wired payment

He was at pains to point out that

holds

by Nuala Maran MORB evidence that a shortage of trained engioeers is holding back the introduction of microelectron-

ics in British industry came this

week. A new survey suggests there are about 46,000 eogineers in the

are needed.

And that number is expected to

grow substantially as the needs of existing users increase and others

the first time.

The conclusions of the survey, which is published by the Policy Studies Institute (PSI) are in line with the "people crisis" being experienced in other segments of the industry.

Last week at the Computing

Services Association sunual meet-ing in Bournemouth coocern was

expressed at the difficulty in re-cruiting trained staff for key roles in small to medium sized software

has made more progress than ex-pected in the application of micro-electronics to its products and processes in the last two years. But

we are still pretty much on the starting blocks, according to Jim

system that we used to use."

customers were put out."

expected. But throughout th 970s controversy raged over the economics and practicality of both providing packet network. and using them.

PSS, the first of RT's X-Stream

British Telecom falls asleep on leap year brings

> Telephone companies were wor-ried about the profitability of teles and other data services being underinined, banks were worried about the security of their transmissions, and other users thought there could be a tricky situation involving packet networks being economic for some types of traffic

tbey just happen to have bought machines with micros in them -

they don't really know snything about the technology."

used in 7% of the total output of

manufactured products and to control about 18% of processes.

The lead in using microelectronics

■ Continued on back page

Altogethet microelectronics

Camputers out a Lynx

CAMBRIDGE-hased micro manu facturer Camputers has unveiled its latest Lynx computer, the Laureate. It is aimed at the small husiness/hobby market and runs CP/M bit machine has 641, workspace memory and 64K, video memory, an eight colour screen and an ex-pansion bus for a printer, joystick or ROM software. Price is £399,95, which pure the machine in the same bracket as Acom's BBC micro and the Sinelair QL.

Satellite success

THE European Space Agency successfully launched the eighth satellite in the Intelsat V series on Monday. It was the ESA's sixth successful payload launch and the last before it delegates launch respoosibility to Arianespace in May. Previous launches include the ECS-1 European communications satellite and the seventh Intelsat V ESA will be responsible for all five of the ECS satellites, the second of which is due up in July.

Commodore sign:

COMMODORE has signed an agreement with Canadian firm Bytec-Comterm covering the development, under licence, of ar iBM-compatible purtable computer. This would be based on technology used in Bytec's Hyperion micro.

UK MICRO maker ACT is to launch a hard disc version of its Apricot business micro this week. It is also expected to autounce a massive price decrease. The disc will be integral to the machine, replacing one of the Snny 3½-inch microfloppy drives, bringing another big deal to Rodime for its 3½-inch Winchester.

Win £50

etters/Leaders

OEMs: Special Festure...

30-33

A SPECIAL Computer Weekly prize is being awarded to the best cotry to the Microquest enumetition.
Microquest, which is sponsored by Williams and Glyn's
hank in association with the Department of Trade and In-dustry's Microelectronics Ap-plication Project (MAP), is a scheme to find innovative ideas from young people for using microelectronics in in-dustry. Full details on page

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System Industries is the world's largest supplier of DEC compatible storage systems.



Woking, Surrey, GU

Speakers storm at static services

computer services business has had bottomed at the end of 1982 and now things were beginning to hardening of the arteries"

The charge was made by consultant Peter Cunningham at the opening session of the first national residential conference of the Computing Services Association in Bournemouth last week.

His remarks were picked up by later speakers and became the theme to a series of variations. Conningham, president of the

US market analyst Input, went on to say that many computer service companies had missed out on the micro revolution, believing that the new machines were just toys.

Companies such as ADP Network Services had continued to grow by specialisation during the

Data Bill

includes

by our l'arliantentry

processors

THE government has made it clear

that word processors are not to be

exempt from the Data Protection

David Waddington, Minister of State at the Home Office, told MPs that only certain operations

involving word processors which

did not threaten individual privacy

would be exempt. There was to be

nu exclusion of any particular type

The Commons standing com-mittee finished its work nu defin-

ing what computer operations were to be coonal securite Bill, and

then moved garekly thruitgh Clause Two dealing with data pro-

The Lords heard that the gov-

word

take off for service organisations

But he saw resistance to change from various quarters. People who still referred to "the data processing department" were five years out of date, he said. And many programmers rejected fourth gen-eration languages because they had spent 10 years learning Cubol,

There was also resistance from top executives who were heginning to eancel bulk orders for micros because the expenditore did not nprove productivity.

Similar warnings were sounded during nne of the conference workshops by IIIS chairman Roger Grahum.

get big. You have got to reach \$100 million by 1988." Giaham argued strongly for scquisition as the road to viability.

Acquisition gives not only faster growth but better quality growth and allows diversification. It enables a shuffling of the pack to the big issues for our industry is the obility to change our com-But in contrast to Graham, Cato

Carpenter, of market analyst Alex Brown, argued for going public rather than acquisition or merger. He attributed Cullinet's success to

Spectre of staff crisis haunts the delegates



sion services as well as new ones Peers discussed the Telecommu-

Duehy of Lancaster, tried to allay feara that British Telecom night abuse its still dominant positiun, after the Bill becomes law.

There had been suggestions that BT be split into its component parts in similar fashion to American Telephone & Telegraph. ernment was determined to extend

In the Commons, MPs heard that it should be possible from 1985 for police forces to transfer its 'must carry' rate introduced in the Cahle and Broadcasting Bill to include teletext and computer programmes associated with the BBC data directly to the police national computer when their own local machines ran out of storage space.

VT100, VT101, VT102, VT131, LA50, LA100, LA12, LA120.

besturk the complete tange of Ognal lengingly will with wide

on ste for cante and the support

Tops to Terminals Distribution.

Every day at 3 o'clock,

we clear the

Decs





CUNNINGHAM ... "Primarily

proposal for a new copyright law to

put to government in early May. The plan was formed at a meet-

ing of all the participants, includ-ing many major hardware makers,

Those represented were IBM, ICL, DEC, Hewlett-Packard, the

National Computing Centre,

THE spectre of the people erisis hung over another otherwise opti-mistic residential conference of the

Computing Services Association. Speaker after speaker referred to restrictions being imposed by the impossibility of recruiting enough trained staff for almost all the key roles in small to medium-size

Doug Eyeions, director-general of the association, in his opening address, said this was the main limiting factor on all of them. There was no shortnge of custoniers or of money, but there was of salesmen, project managers and

account executives.
Consultant Peter Cunningham,
of Input, agreed: "The software
skills problem will become much
worse and primarily it will affect

Brian Mills, another consultant, spoke of the difficulties of retaining staff after acquisition or merger with another company, which he said was far more difficult than he retention of customers. Gordon Ewan, director of the

puting Services Association, Guild of Software Houses, Computer Re-tailers Association, and the Com-puter Trade Association.

The agreement of so many of the industry's leading names in a cam-

paign to force the government to

give higher priority to software protection will be that much

ieties expressed on this question

Pactel managing director Cameron Low described "the viciou eircle of not having time to train the trainees who would give us the productivity to give us more He said that to find aptitude tests which would identify excep-

tional programming talent was The shurtage of staff is difficult quantify, said Ewan, but to judge from increased advertising for computer posts - as much as 56% up in some cases over last

year - there eertainly is a shortage. Ewan added that estimates shortages fluctuate between 2-3,000 and 1.5,000 staff. "Everybody is chasing harder for a relatively small pool of trained people," he claimed.

The assembly was in general in a buoyant mood, Eyeions expected the UK computer services sector to erash the £1 billion barrier this

now, it is felt, The group has appointed

steering committee to consist of CAP'S Rouald Robertson, Nick-Alexander of Virgin Games, Roger Tuckett of DEC and Philip Virgo

of the National Computing Centre. Robertson asid the federation

would act as a focal point for the

industry-wide initiative and would

them to achieve maximum

Engineers want £200m training cash

THE Engineering Council by week called for an extra (100 m2 lion from the government to me engineers. It wants the can re come from srts-based budges from the Department of Educates and Science.

An Engineering Council spokesman says a significant pr of that sum would go towak training engineers in IT skills mak as computer-aided design, may acture and engineering.

Personal cuts

COMPUTER Ancillaries (CAL)a dropping the price of its Briek made 1BM-PC lookalike by 65a 25%, to £1,495. Sales of over 2,00 machines since the machine's launch last year have enabled the company to relax its priong, so CAL chairman lan Skinner, 1811 has also announced price case its Personal Computer of 20% (se

Novel award

SIR Clive Sincisir will award the Sinciair prize for fiction as month. The prize of 55,000 is given annually for an unpublished novel of social or political relevance. Over 200 entries from a over the world were received f this year's competition. A shorts of four has been drawn up by the panel of five judges. The presentation will be made on April 4.

Spending boost

JAPANESE manufacturer Hischinas announced increased spending on its semiconductor divisions for this year. It will raise group capital from last year's 70 billion years 110 billion yen for the year in March 1985. Hitachi expects 30% increase in sales of semicon ductors this year, worth 4000 yen. Mitstibishi is also raising is semiconductor investment, and projecting the same sales growth



Time is running out for this year's

Copyright law ideas to be drawn up ENTRIES close for Computerary week. March 16 is the 184 next week. March 16 is the

final date for runners, jumpers in standers-still to get their sets to gether and their forms in. Full details of the rules and regula and an entry form for the compa-tion, appeared in the February I and 23 editions of Company Weekly The Court of the Peters I Weekly. The first heat takes part

protection will be that man-harder for Ministers to ignore than the isolated voices which have British Computer Sociaty, Com- been heard on the subject up to impact on government. Birmingham on August 4. Telex: 892084 BISPRS G

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CAFS re-launch pays off

ICL's Content Addressable File Store (CAFS) is at last winning orders after its re-launch last year. The company bas now delivered about 25 CAFS-ISP controllers, which run under the VME operating system with the Querymaster enquiry language on 2900 series mainframes.

There are now 164 units on order from 85 different customers, and the company says volume shipments are just beginning.

CAFS is a piece of hardware which enables data records to be extracted from a database at disc transfer speed, without taking up so much of the central processor as in the traditiooal software ap-In a recent demonstration, au-

manufacturing firms.
The Southern Water Authority thenticated by the DMW consulwhich has three units on order tancy group, an ICL 2966 system with CAFS was almost three times faster than a comparable IBM 3081 system for a data retrieval exercise. allowed manpower savings. A CAFS-ISP controller costs £30,000, so the total value of eurrent orders is about £5 millioo. saving £60,000 in manpower costs

alone, due solely to CAFS-ISP,' says Peter Drake, computer services for the authority. The previous version of the pro-

and local government, and the re-mainder from retail, insurance and duct proved a commercial disaster with only five systems sold. According to Carmichael, th

CARMICHAEL... "Upsurge in demand from end users."

CAFS marketing manager,

Hamish Carmichael, says about half the orders are from central

new version announced last year for VME has been keenly sought says CAFS has resulted in much shorter database search times, and by end users. "My nnly concern is whether our DP eustomers are "A planned development of our prepared for the upsurge in de-mand from end users." creditors system has been avoided

US set to outlaw copycat micros The first casualty was Corona Data Systems, which lost in a suit filed by 1BM alleging copyright

MAINUFACTURERS who copy microcomputers could face their first concerted attack by the US government, if an order by the US International Trade Commissions

The ITC unanimously agreed last week that some two dozen Asian manufacturers arc illegally copying micros made by Apple Computer. As a result, the Commission is expected to issue an order today to outlaw machines like the Pineapple and Orange Plus

This will not come into effect immediately. There is a 60-day period during which President Reagan must decide whether in accept or overrule the order.

If approved, US Customs officials will be able to seize any copycat machines, regardless of who makes them, upon arrival.
"We are greatly relieved by this.

says a spokesman for Apple. Software bouses which write

packages under licence for Apple will also be covered by the order. The ITC decision is the eulmination of a two-year hattle by Apple to stop the flow of copies of its Apple IIe computer from Hong Kong and Taiwan, which started to appear on the US markets in

One potential flow in the order is that it may not cover the latesi breed of imitator, which is imported without a read only memory (ROM) chip. This contains Apple's instruction set and is the main proof that the machine

too elosely

lem supplying its customers.

A similar agreement was reached between IBM and Handinfringes the company's well, a US importer of equipment copyrights.

Meanwhile, IBM has recently scored three more victories against US companies in its campaign tu stamp out plug-compatible micros which copy ita I¹ersonal Computer

from Taiwan.

Most recently, IBM won a permanent injunction against Eagle Computer, stapping it from using IBM's input/output code on its own personal computer.

infringement of its instruction ende. Corona has agreed to

produce a "less controversial" ver-

sion of its code and suspend

shipments of its micros until thi

Corona supplies its IBM-compe-tible machines to Wordplex, the

word processor systems company,

and has an agreement to supply

Olivetu with portable, desk-inp

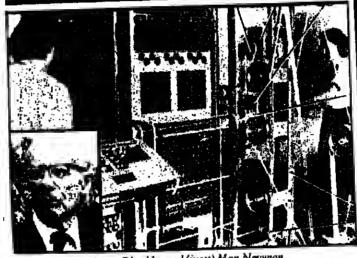
computers to be marketed by Do

A spokesnian for Wordplex UK

division says there will be no prob-

cutel-Olivetti in the US.

has been achieved.



Colossus pioneer Max Newman dies

ONE of the pioneers of comput-ing, Professor Max Newman died week. He was 87.

Newman played a key role in defining the mathematical requirements for the first electronic programmable computer, Colossus, which was built at Bletchley Park during the war to decode German military messages.

Colossus became operational in 1944. Input to the aystem was via five-hole punched paper tape in a closed loop, read at 5,000 characters per second, and output was via a teleprinter. Its characteristics included electronic store registers, conditional logic instructions and variable programming.

problem for transferring the tech-

was the secrecy surrounding the project. That resulted in Britain loaing a post-war lead in electronic telephone exchange technology.

It was only in the late 1970s that

enough information about Colos-sus was released to shatter Princeton University's elaim to have invented the first modern compuer, Eniae, in 1946.

Newman is reported as telling all working on Colossus at the end of the war that "one of the prices of peace must be the losing of the most interesting job we've ever

professor of mathematics at Man-cheater University, 1945-64, where among his staff was Alan Turing, to break the Germans' Enigma code generator, which it accomplished successfully accomplished suc plished successfully. The main the first universal electronic digital

Amdahl catches up

by Keith Holder

IBM plug-compatible manufac-turer Amdahl has launched two new mainframes on the heels of IBM's 308X series enhancements. The 5867 and 5868, part of the company's 508 mainframe series, are designed to restore the 20%

price/performance advantage between Anidahl and IBM machines.
They bridge the gap between the top-end 580 uniprocessor, the 5860 and the more powerful dual processors, the 5870 and 5880.

IBM's changes to lts 308X series mainframes include new models of the 3081 G and K, 3083 B, E and J, and the 3084 Q. The new models add an X to the model suffix and bave between 5 and 14% greater internal performance.

Memories have been expanded on the 3081 KX and 3084 QX to 64 and 128 Mbytes respectively. But improvements have been achieved by re-packaging the in-

processors, the 5870 and 5880.

Bryan Little, managing director of Amdahi'a UK division, says the additions offer an easier upgrade path and provide further support for MVS/SP and VM/SP users.

Little says the new IBM Little says the new IBM machines eroded the price/performance differential held by the existing 5860, "putting us in a existing 5860, "putting us in a existing the provided further support for MVS/SP and VM/SP users.



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Mathematica forges micro link

specialist Mathematica last week commands. pushed into the mainframe-micro nik market with its Ramlink but the company doesn't expect to make a fortune directly from the

Richard Colds, Mathematica Products Group president, says: The personal computer element re only \$185 a copy so it will not have a big impact on our volume. You have to sell an awful for of those to make a million.

"Hin because it gives the users that they want we expect it to conversion hardware. Fring a substantial increase to sales er Ramis II," Cohbusseris.

Rams II is a fourth generation ongatage and database manage-ment system with 1,100 users corldwide and is the main product of the \$30 million it year plus

"Last year we launched 12 new

Rainlink is a software product for the IBM-PC and XT marketplace and provides facilities for bi-directional data transfer between mainframes and micros without the need for protocol

The system has a misinframe and a micro element with the software for the mainframe costing between \$4,500 and \$9,000.

The price is dependant on the performance rating of the main-

It can access data stored on Rali was the pioneer of the nonli min II, VSAM, ISAM or sequential files and IMS, DL/1, IDMS of
the IBM aupplied systems and in win be denvered in the
sutumn.
"We just have the packaging
and some other parts left to do
first."

And Mathematica expects to And Ramlink will automatically make a string of new products an- reformat between a series of nouncements this year. Cobb says: popular personal computer software tools from various sources, including Lotus 1-2-3, the top selling VisiCalc and the ITSoftware Company's series.

It supports keyhoard or mouse Cohb sees Mathematica, which

was taken over last year by US aerospace giant Martin Marietta, making significant improvements to Rsmis II this year.

He explains: "Fur big heavy on-

line production joha - where you have 1,000 terminals updating the database simultaneously - our database was not as good as it should have been. "We have the software for that



COBB . . . "In 1984 we will be launching 14 products."

Northern **Rediffusion looks** Telecom for UK partners unveils Vienna

" TETE

Vienna incorporates MS-DG

design to meet the varying av

stringent technical, language a

ergonomic requirements of the European market".

by John Kavanagh
REDIFFUSION Computers has
seized on a National Economic Development Office (NEDO) report,
calling for a united front by UK
office equipment firms against
foreign multi-nauooala, as ita way

The company is looking for trading and research and de-velopment partners — but insists it is not looking for buyers, con-trary to speculation after six months of poor trading in the middle of last year.

The NEDO report, published

last month, says a consolidated UK response to foreign competi-tion is urgently needed. It shows the UK market for office systems was worth £100 million io 1982 – and UK firms met less than a third of the demand.

"We're not talking to anyone yet, but we've only just started," says Mike Aldrich, chief executive of Rediffusioo Computers.

"This plan will atrengthen the company in its existing markets and provide for better exploitation

Aldrich laughs off reports in other journals that BET, the company's pareot, is talking to Nix-dorf and Control Data about selling Rediffusion Computers. These rumoured prospective huyers also deny any interest in the

One report refers to "BET chairman John Spencer Wills". Sir John retired two years ago and is in

BET itself put out a statement last Friday denying the reporta. Aldrich says his firm had six

months of poor trading after 14 years of profits. "There was no specific reason," he says. "There were no lay-offs and we're now doing very nicely."

Viewdata is "going great", he asserts. Rediffusion Computers is the leader in the market, he says, which is growing at 40% a year in the UK.

One "minor worry" is the new,

hard US attitude to selling equip-ment to communist countries. Rediffusion Computers does a third of its business overseas - and most of that in Eastern Europe.



ALDRICH . . . "We've only just started."

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THE COMPANY

DHSS list narrows to four

security offices came a step nearer last week when the Department of Health and Social Security announced a shortlist of four micro suppliers who "might" be invited to tender.

to tcoder.

The four are: British Olivetti;
BT Merlin in association with Lohelp in developing Lomp. 'They will he working with us in greater gica VTS; Gresham Lion Electronics in association with Casu Electronics; and Systime Computers. They will "be considered spokeaman. further for the supply of to have three area computer

centres serving the whole country has gone to ministers for considermicrocomputers for the depart-ment's local affices". ment's local offices".

The DHSS plana to introduce about 2,700 micro systems into over 500 local offices over a oinemonth period in 1985. This is part of the department's 20 year, £700 million operational strategy to computering the whole of the social

computerise the whole of the social security system.

The shortlist announced last week is part of the Local Office Microcomputer Project (Lomp). A DHSS spokesman says: "The purpose of Lomp is to help local office staff with supplementary benefit

The shortlisted suppliers will

detail, hut it doesn't mean they will all cod up supplying," says the He also confirms that a proposa

was published and the conclus

is that we need three centres." He adda: "We're not quite at the stage of talking to the computer industry, but we will be talking very much more about positive realities towards the end of this year with implementation starting early io 1986."

ICL gives details of combined PC

by John Riley
ICL has finally given formal de-rails of its new 16-bit Personal
Computer, which combines ICL
and Rair technology. ICL also an-nounced last week that for the first time it will sell its PC directly to

large accounts.

There are two versions, each based on Intel's 8088 chip and ICL'a own designed processor board. The Model 16, which sells for £1,995, offers 256 Kbytes of RAM expandable to one Mhyte and wife flormy one Mbyte disca. RAM expandable to one Mhyte and twin floppy one Mbyte disca, while the £3,995 hard disc version, Model 36, has 256 Kbytes of RAM and one floppy disc, together with a 10Mbyte hard disc.

The machines, which were partly designed by ICL in Bracknell, are manufactured in

Bracknell, are manufactured in Kidsgrove under licence, and ICL pays royalty fees to Rair. ICL ex-pects first deliveries to be made in

ports, including four workstation ports, and handles colour. ICL supplies the Japanese company Kokusal's colour terminal for an extra £1,295. The PC offers multi-

sell the PC to large accounts. That marks a move from its PC marketing strategy to date, where PC sales have been a gravely through third parties under ICL's Traderpoint scheme, which has over 500 outlets worldwide.

So far, at least two software companies have announced pack-

companies have announced packages for the 16-hit PC. Systems Union has launched an accounting package and Solitaire-KPG is to

package and Solitaire-RPG is to supply a solicitor's package.

Other software houses have similar plans in the pipeline, in-cluding, for example, Microm Computers and Bits Systems, which both produce travel agents'

packages.

The Rair Business Computer on which ICL's PC is hased, and which has already been available for a year, has dual 16-bit 3088 and eight-bit 8085 processors offering CP/M-80, CP/M-86, MP/M-86 and MS DUAN and the paste mixe for MS-DOS, and the basic price for the basic 256 Kbytes RAM, one Mbyte floppy disc drive and 19 Mbyte hard disc is around £5,200.

See Software File, page 11

NatSemi aims for PoS top spot

by Dave Madden NATIONAL Semiconductor Datachecker/DTS will become the Datachecker/D1S will become the world's leading supplier of pointof-sale scanning systems this year. That is the aggressive prediction of UK managing director Gordon Ambidge. The company was formed just a year ago, following the takeover in the US of Data Terminal Systems in the US of Data Terminal Systems.

by National Semiconductor.

Ambidge says that Datachecker has made a "huge investment and is in a very strong position in the point-of-sale marker". He expects the company to win 50% of worldwide scanning systems sale in 1984, and 30% of the general



AMBIDGE ... "Bxplode."

retail point-of-sale (PoS) market.
Ambidge estimated that the latter market is worth around £20 million in the UK, and says: 'It is set to explode and will be well over. £100 million by 1987.''

McDonnellrevives its Tymshare plans by Dave Madden McDONNELL DOUGLAS, the I'S aerospace and defence group, The main attraction of the merger for McDonnell is Tymshare's Tymnet data communications ser-

panies esneelled an earlier agree-nient in which McDonnell would have paid nearer \$372 million. That deal, first mooted last November, fell through after McDon-nell attempted in negotia. I lower price following offician on Wall Street suggesting it was paying too

Since then. Tymshare has reported a loss of \$1.6 million for liscal 1983. The company may have been forced back to McDonnell breause other sultors, thought to have included Honeywell, did not come up with a satisfactory

This time the ineclanica of the agreement also grant McDonnell an option to purchase 2.3 million imissing Tymshare shares at \$25 each. McDinnell will buy all shares tendered if at least 90% of Tymshare's outstanding shares are tendered. If hetween 40% and 90% is tendered McDonnell will неquire a 49% stake.

has revived its plans to buy vice, which it intends to integrate into its information systems busi-Tymshare, the Californian data transmission company. MeDonnell has offered to pay \$25 eash per share, which means about \$307.5 million for shares tendered.

Two months ago, the two company, or McAuto, and microdata. The resulting division while the months ago, the two company.

Telenet represents about 75% of Tymshare's business. The company's loss in 1983 compared with profits of \$8.8 million in 1982, while revenues slipped by 3% to \$288.6 million. Tymshare has reported losses in four of its last five

Earlier thia year, McDonnell acquired Computer Sharing Services, a subsidiary of Rio Grande Industries in Denver, which offers computer services to telecommuni-

There is still some scepticism on Wall Street that the deal, described by John McDonnell and Thomas O'Rourke, presidents of McDonnell Douglas and Tymshare respectively, as a "defi-oitive agreement", will stand up. They see it having negative impli-cations on McDonnell'a earnings In the short term. But unlike the earlier agreement, Tymshare's shareholders will decide this time.

Lotus sets up European arm

decision support package.

Lotus is setting up a European Product: Development Group to adapt its new database, word processing and communications ymphony for European users... Lotus has already recruited people to translate and adapt the documentation, and last week ad-

documentation, and last week advertised four top posts it software development and marketing.

"We're setting up in Europe for two reasons," explains the manager of International Product Development, Stephen Turner, "First we feel it is meessary to produce versions of Symphony in Liumpean languages, and secondly there may be machines which are more normal in Europe than they more popular in Europe than they are in the iUS and really need

support and implementation The Product Development Group is starting with French and

Symphony was faunched in the US in February, but is not expected in the UK until the second half of the year. Like the 1-2-3 package which made Lotus's name,

THOSE LEGS ARE MADE FOR WALKING. IN LONDON, LIVERPOOL. NEXT WEEK.

by Claire Gooding
LOTUS, star of the US microsoftware market, is about to put real
muscle behind its European operation — but not for its famous 1-2-3

German versions of Symphony as
its first projects, and will be installing a Vax machine dedicated to
communications, with the US
parent.

Symphony is aimed primarily at the IBM-PC market, but unlike la-2-3, it will be made available onother systems and in other lan-guages as fast as possible.

MANCHESTER. SEE OUR AD, ON PAGE 37.

COMPANY COMPUTER COMPUTER

Businessman Smith wants a microcomputer system for his smallish but buoyant company. He buys a typical Personal Computer to start things off. It costs him about £3000.

Businessman Brown, with a similar problem and a prudent eye on the future, opts for the SAGE It costs him £5500, but it goes have 4 times the capacity and can handle up to 6 users.

In no time, Smith's staff have taken to computing and want a second machine - another £3000.

Brown too organises a 2nd workstation - he only pays £595 for an additional screen and keyboard.

Both bosses are asked to supply printers. Smith has to buy two for his PC's, Brown only needs one because his SAGE was designed for sharing.

Please send me the Sage brochure giving details and prices/call me to arrange a demonstration. Business is good for both companies, but whilst Brown's bill for a 6 user system is £11,000, poor Mr. Smith has forked out just over £21,000.

And his troubles aren't over yet.

the company's information, it's going to cost him at least an extra £4500 to rietwork his system together. What's more, his dealer has recommended he



Because his staff need to share does it with a SAGE!

IAL aims at new network techniques

by Robert Parry
IAL Data Communications aims to bring expert systems tecliniques into network management. It has released an upgraded version of its Medius network management system, called New Medius, which as il stands can be seen as an expert system. It is built in years of ex-perionee within fAL, and suggests causes of network failure and ways

round failed circuits. Within five years the system could become self-healing, saya marketing manager Hugh Findhuw. This would allow it to learn quickly how to restore net-works after faults have been detected. Such a system would use the present hardware with up-

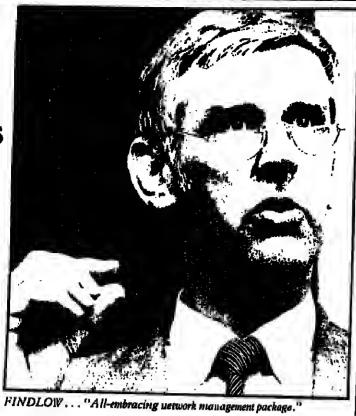
graded software.
"New Medius is an all-embracing network management pack-age," says Findlow, "It gives full management control for real time

teleprocessing networks.
"With New Medius we have an interactive graphical representation, showing how the network is all injuted up, which allows you to restore the network direct from the computer screen."

The system is independent of the physical network, and the intelligent diagnostic units scattered

signed for use inside a building.

The bank is taking 500 new
ATMs to add to its existing stock
of 650 outdoor "through the wall"



around the network to monitor its status are transparent to the data nn the network. There is no degradation of the network, even if the nostic units fail.

The software at the heart of New Medius - the major advance according to Findlow - comes from within the IAL Group. A joint development team was set up between the Data Communications division and US subsidiary

Barclays chooses NCR for inside machines

NCR has 46% of the world mar-ket for ATMs and 56% of the domestic market, with over 3,000 machines Installed in the UK.

Three of the four major high

street banks, Barclays, Midland, and National Westminster Bank,

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Industrial Premises and Site

by Philip Hunter
NCR, the world's leading supplier of Automatic Teller Machines
(ATMs) for cash diapensing, has taken a £5 million order from Barclays Bank for new ATMs designed for the inside a building.

dispensers, and may later order more for some of its other 3,500 UK branches.

NCR has 46% of the world market for ATMs and 56% of the domestic market, with over 3,000 constitutions.

Ocean Data Systems, a graphica specialist 65% owned by IAL. IAL itself is owned by STC. Development of the system cos £1 million over two years.

The software runs on a Vax 11/725, and the whole management system works out at somewhere between £3,000 and £5,000 a line. Typical networks have 50 to 100 lines, though they may stretch up to 5,000 lines.

went to NCR for their ATMs, while IBM, the nearest competitor, an applied Lloyds Bank.

The new, indoor ATM was de-

signed for use in airports, offices and shopping precincts as well as in banks, and is smaller and faster than NCR's existing models. Barclays has bought a 19,300 version for cash dispensing only.

"We won on the basis of price and technical performance," says Les Adams, engineering manager at Thorn-EMI Electronics. "Our

offices, and 1,750 Portis (Portable Ticket Issuing Machines) for use by guards on trains. The equipment was developed and will be made by Thorn-EMI Electronics at Wella in Somerset,

The contract, one of the largest

ever for point-of-sale equipment, involves replacing all existing

ticket-issuing equipment over two years from April 1985.

BR will be aupplied with 2,971 Apris (All Purpose Ticket Issuing Machines) for use in station ticket

BR ticket

to success

by Philip Hunter
THORN-EMI is to supply British
Rail with computerised machines to handle all ticket-issuing, in a f25 million cootract announced last Moaday.

Aptis is a far more machine than any other."
Other machines on tr prised a deaktop consol larger processor to sit un the counter hidden from v

BR invited tenders for the the Apris equipment in 1980. There were 18 bidders, including Westinghouse, which supplied an interim ticket issuing system to BR's Southern Region ticket

BT looks at new micro from **Bromcom**

by Keith Holder BRITISH Telecom is evaluating a new multi-user microcomputer from Bromcom, a small UK company which designs and produces its own hardware and software.

The 16-bit system, the SuperStar-16, has already been

SuperStar-16, has already been placed on the Central Computer and Telecommunications Agency approved list of microcomputers. The system concept is the brain-child of Bromcom's managing director, All Guryel, who says he started thinking about designing multi-user systems while working

for GEC some 10 years ago.

Bromcom was formed in 1978 to help businesses choose the best hardware and software for their

computing needs.

Bromcom launched an eight-bit multi-user system in 1982, and around 100 systems have been sold

He says that he is excited about the BT interest in the new system, and thinks that it is among the frontrunners to replace BT's current generation of office distributed systems.

A spokesman for BT says that the evaluation is part of the com-pany's strategy of looking at tech-



Other machines on trial com-

prised a deaktop console and a

larger processor to sit underneath

machine, with just a desktop console," says Adams.

the ticket information, including destination, on blank carda, rather

than just add the price to pre-

printed tickets as present systems

transactions during each day, and

the data will be sent up by tele-phone to BR's central raginframe

at Nottingbam each night.

The Portis machines will have
64K of CMOS RAM to record

traosactions. They will be plugged

into a data retriever each day,

which will transmit to the central

mainframe in the same way as the

used by BR do.

The new machine will print all

'Oura is a single module

the counter hidden from view.

GURYBL . . . "Excited."

If BT is sufficiently interested, the spokesman adds, it could mean large orders for Bromcom and could be adopted either for internal use or as part of the Merlin

The system uses a 16-bit main

processor to co-ordinate up to 16 eight-bit or 16-bit micros, one per user. The processors are connected through an \$100 data bits.

Each user bas n screen and keyboard. A printer can be attached, although the main processor can be used with a common printer. Up to 160 Mbytes of hard disc storage and tape streaming back-up can be used.

Concurrently.

Entry level cost for SuperStar is
£2,450, and n two-user system
with 10 Mbytes of disc storage

DD 0:1 fact

Root supports Ada with Unix

UNIX systems house Root Computers has added Ada to the languages supported by the Unix operating system. Root, which specializes in the UniPlus 68000 agea and utilities that propassed implementation of the grammers require when using Ada much as I/O continues and recomputer Science Corporation.

AFEW WELL CHOSEN WORDS OF EXPERIENCE COBOL CICS MS/DC VSAM
DU/JUMS/DP. TSO/SPE

ranmers require when using da, such as I/O routines and ma-hamatical notation of integers and outing point when

thematical notation of integers and floating point values.

The compiler currently available contains most of the features specified for Ada, one of the largest languages ever created. The package includes the Ada linker runtime support, installation guide and references manual.

Its UK price has not yet been decided, but is likely to be a little more than the \$3,509 for which it sells in the US on 68000-based kit.

City underwrites

CITY Computer Scrylces has earned £500,000 from two orders for insurance underwriting for insurance underwriting systems. The company is osipply its system to Sedgwick Group Underwriting Services, and Winchester Fox & Co, with terminals installed in both companies local offices and in their City based in detwriting rooms.

SALES BRIEF Thorn gets MoD picks Scicon kit for map work

SCICON, the UK systems how is to supply the Ministry of the fence with computer equipment worth almost £1 million to before duce maps and models of between the field terrain. The ministry significant cereive a workstation and gradial terminals for a variety of spour tions, including validation of an from previously digitised may generating models of terrains and demonstrating to cartographer demonstrating to carlographer the benefits of map systems based on digital data. One benefit is the maps of different scales can be generated without the customy manual labour.

Oxford export

OXFORD Computer Systems he won a £30,000 export order for intelligent ioterfaces for the Commodore Vic and 64 microcamputers from California-based software The Aptis machines will have 512 Kbytes of bubble memory to atore information about ticket and peripheral supplier HES. The order is for 3,000 Interpode, which enable users of the Commoder machines to link up with equip ment such as printers and plotes via IEEE and RS232 protocols.

Typeset standard

THE Northcliffe group of provincial newspapers plans to sun-dardisc its offices on computer based typesetting systems supplied by GB Techniques of Prestwick, Scotland. Already six newspaper in the group use terminals and equipment supplied by GB Tech-niques, and four more arc to insul-systems worth £200,000 in the The printed tickets will be mag-netically coded to help BR fight next three months, leaving 12 m maining newspapers in the group committed to computerise in the next few weeks.

Rugged Husky

HUSKY Computer, the Coventrybased micro-maker, has now sold rugged portable computers work £500,000 to the Ministry of Defence, following a new order. The systems are used for data capture and controlling distribution of parts in the field. Some of the atest batch will be used by US Air Force bases in the UK.

Councils buy

PACKAGE Programs of London has sold accounting software to four more local authorities in the last month, earning £150,000. Over 30 local authorities now use the company's accounting software, which runs on a variety of mainframes, including the IBM 4300 range, and minis, including the IBM System 38 and the Honeywell DPS7.

Top-of-range sale

up can be used.

The system has its own operating system called Impos, which nllows two industry standard operating systems to run under it concurrently.

Entry level cost for Surveyor of this order, and a previous of the content Addressable File Store (CAFS) to Avonmore Creaments, one of Ireland's main agricultural operations.

BP Oil first

BP OIL is the first UK user of the Massnet networking system, developed by Masstor Systems International. BP will use Massnel to link a number of Sperry main frames and DEC Vax minis at 0 Hemel Hempstead compuler centre, and may later extend the

Future expands to spread risks

by Dave Madden
FUTURE Technology Systems,
the fast-growing Scottish OEM, has formed two new subsidiaries. Fuure Technology Developments will be a specialist design and de-will be a specialist design and de-design and de-Most of the new company's velopment company, and Future Technology Services will be an independent service and maintenance organisation

Managing director Peter McHugh explains that Future Technology will spread the risks of ducta, which will go straight up to being dependent on just one activ-ity and "become a holding company with investments across a whole range of computing areas". The company will create further

subsidiaries during the year, and may put its manufacturing effort

the company's move to tailor its partment of Trade and Industry standard systems for customers on office automation project for the

has constantly been commissioned to do independent projects. McCrossan expects to accelerate another attempt to exploit and exthe process by giving the operation

business will come from its parent company this year, but that de-pendence will fall off in 1985. It is already working on the next generation of Future Technology pro-

Intel's 80286 processor. It is developing enhancements to the current Series 86 range, and looks set to produce a Unix machine and networking products

thia year. The new operation has substaninto a separate company.

John McCrossan, managing already. It is building a teletex director of Future Technology Developments, says that the new organisation is a oatural extension of

cil's expert predicts that in 1985 France's ahare will be 17%,

Britain's 20%, and West Germany's 30%. In spite of the fact that the number of computers in Prance has been multiplied by 15

Boisson points out that the im-

poct of computerisation on French

ndustry is very uneven. Latea

statistics show that computers were installed in 73% of firms, with staff between 200 and 1,000, but only 43% of those firms had from 50 to 199 employees.

The percentages shrink to 19%

for between 10 and 49 workers

and to only 1.4% for small busi

nessea with fewer that 10 people or

About two out of three medium

sized wholesale business firms in

France operate computers, bi very few transport companies.
"Computer technology today
offers the best opportunities for

improving the nature, organisation and safety of joba," asys the Economic and Social Council expert.
"These possibilities must be fully exploited by joint efforts on the

part of employers and employees." Boisson also sounds an alarm for

order to get level with our comp

over the past 14 years.

the payroll.

manufacturing.

doing anothware work for Ferranu.
Future Technology Services is

tend existing business. Managing director David Shear says that he will look for maintenance contracts amongst new manufacturers and distributors, particularly companies coming to the UK for the lirst time, and companies with ser-vice problems in isolated areas. "The microcomputer market is

growing at such a rate that there is a great demand for a multiple product engineering service on a local

basis," he says.

It will provide service either onsite or at local service centres, four Televideo muchines, and periof which will he in place hy the end of 1984. Shear would not reveal precisely how he intends to cover the country, but he will be making

The company will handle popular ranges of business micros, including IBM, Apricot and McHUGH . . . "Future will become a holding company with investments across a whole range of areas.

preference at the moment is to

seek a full listing.

Last July, when the company raised £2.75 million in a private pherals, as well as aervicing the customers Fiture Technology Systema aupplies as un OEM, such share placing, it forecast tornover as Office and Electronic Mochines. in the year to December 31, 1983 McHugh says that Future 'fechof £6.5 million. McHugh says that nology Systems is still on target for a public flotation in 1985, and his the company is not far off, whilst it

will make at least £13 million this

Future Technology De velopments and Finnre Technobigy Services are expected to turn over £3 million and £400,000 respectively in 1984. The company's order book stands at £12 million.

French jobless turn to computers, says report

by Jack Gee FRANCE'S Economic and Social Council, o body established by the constitution as watchdog over the government's economic policy, says that information technology is the only solution to French unem-

ployment now well over the two million mark. A report by Bernard Boisson, a council expert, argues: "We must play the information technology card for all it is worth. Although computerisation involves massive problems in the short run, it is the poly answer to the job crisis in the medium and long term."

Boisson adds: "Unless we develop informatics, we cannot schieve the economic results on which our social progress de-

The Economic and Social Council's report shows that manpower, or more accurately wontanpower, bas been playing an increasing role in French industry, with the development of service activities and the shrinking of manufacturing.

These acryice industries, to which information technology makes an ever increasing contribution, have been developing at an annual rate of 0.6%. However, France has been

slower in introducing computerisation then its neighbours, according to Boisson. Two years ago, France operated only 19.5% of computers bave a lot of ground to make up in installed in Europe, compared with West Germany's 26.6%.

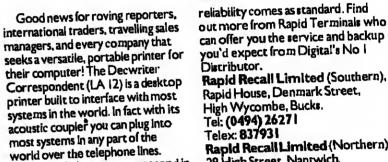
goes on file

Southdata head, Peter Laorie former editor of Practical Comput

format is ideal for thia," he says.

Intensive Workshop
APRIL 10th-12th
The Computer Seisnes Department of The City University, London is running a 3-dey short course celled:
"An Introduction to the UNIX Operating System and an Overview of the language C" costing £250, Lectures providing an in-depth understanding will be interleaved with supervised on-line practical easigns, and a day is free terminant time will be offered to stiendess on this 13th. The workshop should be particularly attractive to Managers (Senior, DP. System) and Ahalysta (System, Programmars).

Details: Reviste Ward 01-253 4398 Extension 3710 in the form of a reached Computing, says it is a collaborative experiment to find if a market exists. He is siming mainly at IBM-PC users. It is no good offering such data in the form of a textfile. It needs to be searchable and Superide's free He has licensed expert system source code from Donald Michie of Edinburgh University, so that users will be able to derive rules from the mass of data to help them plan their business moves.

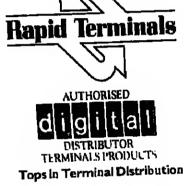


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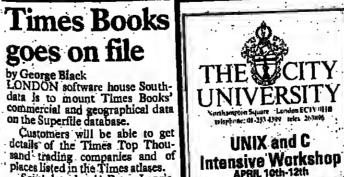
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UNIX and C

IN FEL is folling behind in the 32- rect this. bit uncroprocessor race. The US semiconductor manufacturer says that its true 32-bit iAPX 386 processor will not arrive until mid-1985, despite earlier predictions that the device would be available at the citd of this year.

This gives competitors, partienlarly its US rival, National Semiconductor, a substantial lead. Nat-Semi promises customers that they will have the 32-bit 32032 chip in June this year, and versions with bousted performance are promised

And Mutorola is running close hehind. It expects to start shipments of its 68020 chip, the 32-bit member uf the 68000 family, hy the third quarter this

A spokesinsn for Intel denies any production delays or technical difficulty with the 386 chip, and says that the company will not suf-fer by being last. "We have an established customer base which is quite happy to receive deliveries next year," he claims.

Hans Rohrer, NatScmi's European pruduct marketing director for microsystems, disa-grees, and doubts that Intel will actually deliver its proceasor before the end of 1985, or even carly

The 286 is Intel's virtual memory 16-bit processor, compat-ible with the high selling 8086 and 8088 but running at much higher

Roliver says that this planned compatibility is at the heart of Intel's current problems with the 286 and could slow down the 386 develupment considerably.

He is also seeptical about Motorola's ability to deliver its 32bit contender on tinte, saying: "We do not know of anyone who has actually seen silicon from Motorols. It is using new techno-logy and it is unrealistic to expect such a complex part to be pro-duced with no problems."

He concedes that on paper the Motorols device looks "a really

nice part".

NstSemi will not stand atill, he asserts, and will capitalise on the lead gained in this area. It plans to implement its first modification to its 32032 by mid-year.
Cslled the 32032B, it will have

speed boosted to 12MHz by shrinking the component parts, which, together with modifications to the architecture and interfaces, will boost performance by some 40%, says Rohrer. A further refinement, the 32032C, should give a ten-fold performance increase "It has already got problems over the original processors by the with the 286 processor," he says,



GEISLER . . . Held off until Sphinx was ready.

Sphinx opens in Silicon Valley

by Dave Madden SPHINX, the Unix systems distributor formed in Muidenhead less than's year ago, is to open an uffice

in Silicon Valley.
The operation will be funded by \$200,000 investment from San francisco venture espital fund, New Enterprise Associates.

Sphinx'a founder, Dr l'smela Geisler, says that her US auppliers, including Ystes Ventures, Bridge Communications, Olympus Software, and prospective eustoniers have all encouraged Sphinx to mske the move. The office will provide a West Cosst outlet for Sphinx's UK suppliers too.

New Enterprise Associates is one of the major US venture funda with assets of over \$100 million.

with assets of over \$100 million.
Its high-tech investments include portable computer maker Gavilan and 3 COM. This is the first time that it has put cash into a UK company. In December, Sphinx Isnded a

£1 million second round of fund-ing from the Olivetti venture cspi-

tul fund and its two trigind investurs. Abingworth and Ala Patricol's Peter Englander and that this new injection should be cumulatered as processor. cunaidered ss part of the san

Geisler says that New Enterprise hud wanted to come in that stage to fund a US operation, but she had held the company off until the considered Sphinx was ready.

Geisler comments that both

Sphinx's aales and profits are on target, and that her investors are suitably happy. But she conceder that the company's progress has proved slower than she had antiqpated s year s go.
"No one disputes that the man-

ket for Unix products is there, but it is creeping slong slowly in the UK, partly because hardware for Unix is not shipping in vast quattities. We've been flooded with prospects, but the large buyen haven't really bitten yet, she says. She adds that much of Sphin's

revenue so far has come from con-

Honeywell boosts French videotex

THE French videotex industry has

secred a major success in the US with an order by Honeywell In-formation Systems for an initial delivery of 2,500 Minitels. Minitel is a low-cost, user-friendly termi-nal already widely used in France. Telie Alcatel, a big supplier to the French market, won the

vidcorex software package called Telesource. Honeywell will supply and maintain this product in the

Announcing the new orders, Roy Bright, managing director of Intelformatique, the marketing arm of the French telecommunications suthority, said: "These products have been developed from France's own national videotex programme, Teletel. Now they are

"This sale is particularly signifi-

cant, because it arrived at the height of the ballyhoo in the US over the much costlier and more sophisticated approach to videotex graphics, which is being promoted American advertising agen-

The head of French Telecom's Honeywell has also signed up with France's Groupe Francais D'Informatique to buy a French

Hance's own mandain value to with Honeywell shows Americant business users that they do not have to pay a high price for the

type of videotex they require and need not buy a costly, intricate

Intelmatique conducted the negotiations which brought Honeywell together with Telic Alestel and Groupe Français D'In-

formatique. Combining French Teletel software and its own DPS-6 minkomputer, Honeywell is already tunning s videotex aupport centre at Schiller Park near Chicago's O'Hare Airport.

MICRO NEWS



IBM cuts cost of PC by a fifth

by Keith Holder

IBM is cutting the eost of its highly successful Personal Computer by a fifth, and reducing the price of the hard disc PC XT and PC line also earne online recently.

The price cuts will apply

model by 7%.

An 1BM spokesman says that
the exact reductions of individual
components will vary. Monochrome screens, for example, will drop 25%, while keyboards will come down 5%.

The reason for the cuts, he ssys, is that European manufacturing costs have come down following the start of PC production at the

The price cuts will apply directly to IBM's enstoniers and retail centres, but deslers will have to decide how much to pass on to their customers.

The euts come into effect inmedistely and will affect the whole of Europe, though not the US.
Richard Holway, group marketing director for Hoskyns, one
of the Isrgest IBM-PC dealers, ssys that, in common with all other

He describes the move by IBM strategy", and adds: "There will be a number of major personal computer manufacturers that will be very cuncerned by this an-

Holway says that IBM has s 30% share of the business micro market and can only improve its position. He sees the company's sbility to deliver in volume ss crueial in putting pressure on other

Lecturers succeed High speed memory with Unix station

by John Riley BUSINESS is stepping up for three Essex University computer science lecturers, who quit their jobs to set up Uniqix, a company ta market their own Unix worksta-

So far the company has sold 15 Motorola 68000-based Unix workstations, which are aimed at the technical market area, and is on target for 50 machines this yesr.

"Our plans are modest," says managing director Mike Jones, "and we are confident that we will meet our target of shipping 50 units. We are aiming at higher education and research sections of large organisations, and not trying to sell to end business users." Jones, chairman Adrian Wheel,

ley, spent 12 months evaluating Unix machines suitable for the university's needs and decided they could do better themselves.

"We decided to develop a new product becsuse we wanted low cost, and we slso like the idea of bssing it on the \$100 bus structure to give it expandability," ssys

The S100 gives it compatibility with small bua structured microcomputers using the CP/M

Unique usea the Unisoft System 3 version of Unix. A "sensible" configuration of 512 Kbytes of main memory, 10 Mbytes Win-ehester dise drive and Unix licence costs £5,000-£5,500.

chips are launched

JS chip msker Mostek.

Both companies presented their devices at this year's International Solid State Circuita Conference, held in San Francisco at the end of

The 256Kbit Mostek chip is organised in the "industry standard"
256×1 configuration. It follows last year's release of a 32K by eight bit configured 256K device.

Access speed for the new chip is 59 nanoseconds, a two-fold improvement over the earlier device, which is already being marketed by the company. Samples of the new chip are due at the end of next

15 years.

software of any desktop.

industry standard networks.

done, come to Data General.

by Kelth Holder
HIGH speed memory chips using conventional NMOS technology have been announced by IBM and the speed between 16 sand 20 nanoseconds, at least three times (ster than most other 64K memories, says a spokesman. memories, says a spokesman.

The improvements are attributed to new design festures, in-eluding a self-timed sensing circuit and improved access buffer. The number of clocks has also been reduced.

It uses four devices per memory cell, which makes it bigger than most conventional 64K chipa. But a spokesman says that the size will not be a penalty, as the chip can discharge information in 16-bit blocks. Moreover, as many com-puters use words of 16 or 32 bits, achieve the same word size,

£265,000 buys failed Digico

FAILED British minicomputer manufacturer Digico was bought for £265,000 last Friday by Centreway, a £75 million public conglom-erate. Centrewsy has transferred its computer division into Digico to set up s new top uer of management for the company.

Former Burroughs manager Ian Lenagan has taken over as manag-ing director. He will keep Digico's eurrent range which includes its 16-bit 7800 M minicomputer and Its Prince micro, and in April will add a 68000-board Unix micro developed by Centreway subsidiary,

Hawk Microcomputers.
Another Centreway subsidiary,
Fast Software Products, will pro-

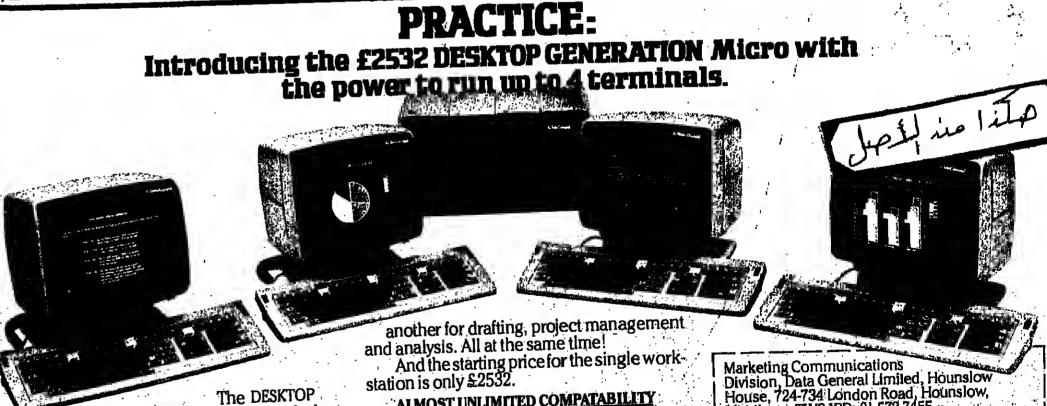
vide software for the new Digico. The purchase agreement signed between Centreway and the re-ceiver, Pest, Marwick, Mitchell, gus rantees retention of the 35 staff

But some of the eight Digico staff st Stevenage sacked by the receiver last week are considering tsking the company's new owner to an industrial tribunsl. One suggestion is that the sale was agreed before the sackings but only announced later, in which esse Central Company of the sale was agreed before the sackings but only announced later, in which esse Central Company of the sale was agreed before the sackings but only announced later, in which esse Central Company of the sale was agreed by the sale was reway could be liable.

Optim had been tipped to take over Digico, but managing direc-tor Mike Burden says he did not raise his bid when Centreway ap

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UNITED LEASING, the quoted IIIM equipment leasing specialist, has formed a German vobsidiary. United has been trading on the Comment from its UK office for some seven years. The group moved into the US two years ago, and is now doing \$100 million an-

pany United Leasing Gmbh, has a close working relationship with floaton Leasing, a division of First National Bank of Boston. The operation already hoasts leases on 1BM 3380 disc systems, and two

3081 Aludel K processors.

Parry Mitchell, United's chairman, says: "We're totally committed to expanding our opportunities in a very hig and competitive market."

United has also set up an international brokerage division through its UK subsidiary, United Computers Limited. The division will provide a channel for re-marketing surplus equipment, and will buy kit not available front the group's existing portfolia.

United was the first independent computer leasing company to obtain a full listing on the London Stock Exchange in June 1983. It is forecasting profits of £3 million for

the Unlisted Securities Market,"

Simms is a merger broker or, as

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he would have it an acquisition



aip that the Chancellor will have a go at the banks. There is a possibility he will do something about capital allowances, and lowering of corporation tax could diminish the competitiveness of leasing."

itick Exchange in June 1983. It is orecasting profits of £3 million for che year ending March 31.

Mitchell predicts that the Chan
Mitchell predicts that the Chan
But he expects this to have more effect on leasing companies associated with the clearing banks.

But he expects this to have more effect on leasing companies associated with the clearing banks.

But he expects this to have more first year. Tullett has been returning pre-tax profits of about in a "development phase". He expects to sell a minimum of 170 systems this year, and has forecast

Analgamations and Investments, specialises in high tech takcovers,

and has arranged six marriages which have all brought fledgling companies under the wing of its

Select keeps a watching brief for

about 100 companies. They include the likes of Ferranti and Electronic Rentals. Its deals have

scen computer supplies and main-

These mergers involved an aver-

TPS

client corporations.

eellor of the Exchequer's fludget next week will bring changes to leasing regulations. "For the last six months there has been hot gosaio that the Chancellor will have a subsidiery of months there has been hot gosaio that the Chancellor will have a Tullett and Tokyo Forex Interna-tional, for £25,000. This will form the core of Atlantic Medical, and In 1983 the company managed the group intends to invest pre-tax profits of just £18,000 on £500,000 in the operation is its turnover of £557,000. Blessdale

£600,000 is set to raise £600,000 on the Lon-vember 30, 1984. That would put don Over-The-Counter market.

Licensed OTC dealer Harvard Securities is offering 2.4 million multiple of 9.5, given an effective tax charge of 35%. sbares in the company at 25 pence.

The cash would go towards funding growth and extending the The company was founded in 1975 by its current chairman and managing director Eddie Bleasdale. Originally it was a microcomcompany's marketing operation.
"We are looking for experienced systems integrators who can match our products to their eustomers."

While sales efforts have concentrated so far on traditional Unix users, such as the universities, development of commercial applications software for the operating system will help it move into professional sectors.

Bleasdale would not be drawn

on the prospect of acquisitions "We are not talking about that," he said, but confessed he would be interested if the right opportunity came along.

The offer for sale should be well

subscribed, if for no other reason than that it will be one of the last opportunnities to invest in a company which qualifies under the Business Expansion Scheme in the

SHARES TABLE

Bleasdale is Leasing leaps to Out to raise \$\frac{\partial \text{Leasing leaps to}}{\partial \text{pillion}}\$

TOTAL value of computers of infection and infection of the Equipment Leasing Association rose by 41, last year to £702 million, fact £477 million in 1982.

The computer and office suis inent category accounted for 29, of the ELA's overall business worth £2,894 million, in [983, b] moves past ships, aircraft and gl exploration equipment site second biggest category behind in dustrial plant and machinery.
"It would be a bit much to n-

pect the computer category a continue to grow at this rate," up Tony Mitchener, ELA chairman He expects that increasing volume of the leasing business in 1984 m be cancelled out by decreasing out of hardware. But the value of worl processing equipment leased and increase further, while the valued mainframe computers leased will continue to decline.

The ELA bas 63 members, is cluding United Leasing, Premier Computers (part of the recenti-listed Dataserv), and Angle Lea-

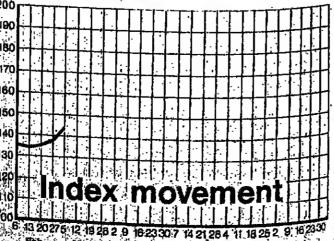
Mitchener says the value of ik leasing market has grown studi in real terms over the last the years. But as the economy is proves, the value of the leaving market will level off.

Broker doubts the USM route

The shares table, which is specially compiled for Computer Weekly, shar selected computer companies that reflect the state of the computer industry.

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The table shows the claring prices in London on Friday and in America on Thursday and the clares from the previous table. Highs and Lown have been adjusted where necessary. The Short Index a based on a selected his of the UK companies.



Company News is compiled by Dave Madden

He says that getting into be with an industrial partner can off automstically the best option for an entrepreneur far more securl young companies, and can store up mony problems. "Companies just and more certain growth prospec don't understand the pressure or than's flotation. He claims that companies

says Simms. Not least of these is that they are expected to live up to faney price-carnings

tchance group Terminal Systems
Services, and Derbyshire miero
distributor Midlectron, bought by
Electronic Rentals, and die Vinten So Simms is crusading to dissuade companies from taking the fashionable USM route. He group acquire Trivector Systems, s software company based in says he has stolen five from the market, but admits to having lost rather more deals to it as well; Pericom, Microlesse and Cifer

exposure they will face on the mar-

age consideration of over £1 million, and naually include later

consultant. His company, Select payments linked to a performance formula.

Simms' conviction is that the
Unlisted Securities Market is not

puter consultaney, but in 1981 Bleasdale was one of the first UK

companies to jump on to the Unix bandwagon with a 68000-processor

Bleasdale says that because the

once approached and which nored his services and went market, are now regretting it.

Ironically, several of those the got awsy (companies like Cifer and CPU) are coming back to him in a scramble to make their own stra-

According to Simms, the des he has done so far are "just the ti

Finance specialist ups its profits by 400%

saw pre-tax profits leap from year with the incorporation of CCI £125,000 to £495,000 on turnover Leasing. It will look to new geo

investment management system.
In 1983, CCF opened a Hong Kong office to sell its systems in the Par East and Australasis, and has quickly recouped that invest-

tar io the current fiscal.

CCF has also announced a share;
split and a four-for-ord scrip isaue.
In the hope of increasing the marketability of its stock.

ICL goes Concurrent for its new personal

computer. The machine is due to be launched this week. Unlike previous ICL personal

SOFTWARE FILE

computers, the 16-bit system does not originate at Rair but is manufactured and designed entirely by ICL. The company has decided to stick with Digital Research's multi-tasking as well as multi-user, and allows IBM's operating system PC-DOS to run as part of its envi-

Concurrent CP/M has been operating system supporting its office automation plan, the Local multi-tasking system.

system, but so far only three British manufacturers, Future Technology Systems, ICL and ACT have implemented the new

ICL looked at several multi-user operating systems before plump-ing for 3.1. Although the system can, in theory, manage up to 16 operating system strategy by taking Concurrent 3.1, which is tasks on each screen, ICL is generation of Unix-based multi-user terminals and several generation of Unix-based multi-user terminals and several and, in some cases, the coming generation of Unix-based multi-user terminals and several and in some cases, the coming generation of Unix-based multi-user terminals and several and in some cases, the coming generation of Unix-based multi-user terminals and several and in some cases, the coming generation of Unix-based multi-user terminals and several and in some cases, the coming generation of Unix-based multi-user terminals and several and in some cases, the coming generation of Unix-based multi-user terminals and several and in some cases, the coming generation of Unix-based multi-user terminals and several and in some cases, the coming generation of Unix-based multi-user terminals and several and in some cases, the coming generation of Unix-based multi-user terminals and several and in some cases. limiting its users to four screens. and recommending a maximum of fnur windows in the interests of maximum performance.

Concurrent CP/M 3.1 is spearspecified by the Department of Health and Social Security as the search to rally the multi-user

Peachtree's parent and the world's

Isrgest applications vendor, to get its naoie known in Italy, which it sees as probably the third most

it has done little business there. Peachtree UK general manager

with our software."

Bureau goes shopping with £1m

BELGIAN-OWNED buresu LA Computer Services is to go ahopping for vertical market software firms, backed by £1 million cash from the sole of its releasily and the sole of its releasily markets.

vertical markets.

LA, formerly known as Lowndea
Ajax, at present has minicomputer
packages for tour operators and
associations such as trades unions.

Lowndes Ajax was itself ac
quired by CIG from the Hill
Samuel financial group of £3 million in 1980. The CIG organisation

European operations, "It makes sense to span as broad a market as Concurrent.

gateway to a whole range of appli-cations under different operating systems, spanning eight-hit single user machines, IBM's PC-DOS user systems based on Motorola's 68000 and Intel's 286 chips. Digital Research is heavily involved in Unix implementation with Motorola and Intel.
"The crucial job is to commu-

nicate and share resources between different processor and systems, says Bailey. "That is why CoucurWhat was important to us was

Ossible."

He regards Concurrent as the multi-user capability." explains John McMillan of ICL's software Industry Support Centre. "The other advantage is that Concurrent doesn't preclude us from using other operating systems if the need arises." One of the functions provided

by Concurrent is the ability to run several PC-DOS tasks in simul-taneous "windows", effectively making PC-DOS multi-user and multi-tasking well before PC-DOS originator Microsuft's own Windows product hecomes avail-



BAILEY . . . "Gaterouy to whole range of applications

Peachtree pushes into Italy

PEACHTREE has linked with a major Italian corporation to push its way into Italy's commercial and educational software markets.

The deal is with Fininvest, a conglomerate based in Milan with

tentacles into television, property, financial services and travel agencies. Its newly-hatched sub-sidiary, Italware, will promote Peachtree's micro applications for the business world as well as its Eduware range, eurrently being translated into Italian.
Fininvest's two TV channels

will launch a heavy promotion caropaign for Peachtree products just at the time when a new scries

important country in Europe's computer industry after the UK and West Germany. Up to now of programmes for computing in schools is being sercened there. Peachtree educational programs are currently being translated into several European languages, and the Italian version should be completed by the end of May.

The announcement follows a

major contract between Peachtree and Olivetti. The leading Italian hardware maker sgreed to bundle Peachtree's applications, including spreadsheet, word processor, spelling checker and mailing list manager, with all its M20 micros running under the MS-DOS operating system from this apring.

This agreement now appeara as one slep in a campaign by MSA,

This man behind it is Silvio Berlusconi, who has built up a group of 3,000 ataff with \$500 million annual turnover.

cash from the sale of its microfilm

This week it completed the sale

of its computer output microfilm division to the specialist company

Mlerogen. For Its money,

Microgen, a leader in its field and quoted on the Unlisted Securities

Market, geta 18 staff and 100 eus-

is to be a service

as a burcau service from April. Previously it was only available

The new approach is being taken because of reluciance among manufacturers to embark on cxpensive automatiou. Scieon product manager Peter

West saya many firms have com-promised with micros to handle

outgrown and, though eheap, their software is often inadequate. This makes a nonsense of the apparent

was 23 and wrote it in her bedroom. It has since expanded to over 100,000 lines of code and is used worldwide at 600 Hewlett-Packard sites, including 45 in the

among small, high technology manufacturers. The larger sno more conservative corporation have yet to take the plunge.

government and consumer markets and will go largely to small specialist expert systems builders.

Manman

is to make its manufacturing control system, Manman, available

as a free-standing package costing £100,000 or more, including the hardware. Now it is to be available for £3,000 a month.

tasks such as stock control and "These systems are very quickly

cost-saving."

The program was written by
Sandy Kurtzig of Ask Computer
Systems in California in 1970. She Diek Moore, who has responsibility for Continental operations, says: "I'm very excited about the idea that a whole generation of Italian children could he growing up Fininvest is one of Italy's top

Police called in at software house by Claire Gooding POLICE have been investigating incidents in a dispute between two Loadon software dealers. They visited the Kilburn offices of Pearl

Systems and interviewed two of the managers, Steve Prentice and Marilyo Hickman.

The case centres on an applica-tions generator called Pearl, de-veloped in the US by Pearlsoft. based in Bouraemouth, developed the product for the British market, gitech is claiming they took with tech was the sole UK distributor. Pearl Software International.

but was wound up with debts of them some of its property, making £120,000 last year. Its founder, it impossible for it to carry of Chris Hibbert, went to work for some of its projects. Hickman has said her new firm Mngitech in Kilhurn, which nego-

has an "interim" agreement with the developer Pearlsoft to market tiated UK distribution rights to Its head, Stuart Lishman, em-ployed both Hickman and Prentice the software.

Ron Lutz, chairman of the French distributor of the product, until recently. Hickman was company secretary and Prentice marketing munager. But they left to set up on their own with n new Prentice and will continue to. always dealt with Hickman and

But Pearlsoft stated that Magi-

GRAVY TRAIN!

the program.



computer. Designed to break the barrier between computers an the 95% of people in Europe who've never used one... Priced aggressively to be sold in

volume. With a specification that's unique. So unique that the Microsoft Corporation expect 50% of software sales in 1984 to come on Macintosh.

And that profit opportunity is there for you, too.

If you're interested in developing software for Macintosh, we'd like to hear from you. So that we can tell you about the kind of help only Apple give to software

Macintosh Software Development Apple Computer (UK) Limited, Fastr Heinel Hempstead, Heus HP2 (BR FREEPOST) Apple Computer Inc., TSA Apple is a trade mark of

Pleasetel	me	:alorxi	tthe Mac	inte	գուդի	Science	ılt
Name	٠,			<u>. </u>	<u>.</u>		
Company				- : -			:
Address	- : :	 	and .				

CW/6/3/84 Specialist Area _

developers. So that you can get on the gravy

CONSULTANT (Computer & ment. It says the Hong Kong operation contributed £100,000 to profits in 1983.

Securities Market, has reported a four-fold increase in 1983 profits.

In the year to December 31 it in the year to December 31 it in the year profits leap from year with the incorporation of CCE.

in 1725,000 to £495,000 on turnover up 57% at £2.1 million. The results are broadly in line with market. expectations, though the company's slares hardened 40 pence to 690p on the news.

The company says the improvement reflects increased sales volumes of both software and turnkey system business, and a continued fightening of financial controls.

CCF established itself by designing a computer system, Fiscal for stockbrokers A. J. Bekhor, and that is still its major earner. It recently won a large order from Philips & Drew.

The company also reports considerable interest in its Tima in 1983, CCF opened a Hong.

Leasing. It will look to new georgaphical areas and msy consider selling its software through agents overtees on a royalty basis.

CCP was the best performing computer-related company on tha Unlisted Securities Market in 1983. Its share appreciated 270% in the year. But st 690p, the company is left on a fully taxed price-carnings ratio of over 20. Although analysis agree that with the City flush after such a good year in 1983 with enormous potential—its abares look modestly overpriced against competitors, Rolle & No-lan, for exampla, is on a p/e of 13.

Broker a Hernry Cooke, fax in the result of the current fiscal.

May Apr May Jun

associations such as trades unions. It began as a bureau concentrating on payroll services and computer breakdown recovery, but has since diversified into packaged software. Its parent is Centre Informatique Ignore generators at your peril, says NCC SEVENTY known software tools are now classifiable as application program generators—and probably as many again are not known, a recent survey by the National Computing Ceotre has found.

The survey Application Programs of the survey Application program generators—and probably as many again are not known, as recent survey by the National Languages up to 1990. But in the second half of the survey of the sur Any DP organisation which ig nores the potential contribution nores the potential contribution of generators is extremely shortsighted, the NCC concludes.

By 1990 the expert systems market will be very hig business. The revenue will come from bosiness,

ably as many again are not known, a recent survey by the National high-level languages up to tional high-lev

listed. It forecasts that generators revise methods and organisation.

AND THE

Software file is compiled by George Black

Midwich got

IT was with considerable concern

that I read the headline given to your report (February 16) which

stated that "Acorn gets factory cash" in respect of the financial

package arranged by my company, Midwich Computers.

we have had with Acoru's BRC Micro has contributed to our rapid expansion, the vote of confidence Midwich has been given by the

new investment is not connected

with Acorn in any way.

DAVID WATSON

Maoaging Director

The Eduor welcomes letters com-

menting on subjects published in Computer Weekly, or on original

While it is true that the success

the cash

From software novice to guru in eight years

vice to gurn in eight years - proh-ably a record. Hin then records are set and broken often by people in California, and hy people in soft-ware, that this may mu be the most

remarkable thing about her.

She is known as one of the world's leading experts on the Unix operating system, though her claim to the title rests on having founded a small market research company emphying 25 people. Her reports on the industry are bought and stodied by AT&T, IBM, DEC, Hewlett-Packard—

by George Black

"My data is very reliable and that's why they trust me," she says, "but I hope people aren't treating everything I say as gospel truth. I do throw out a lot of ideas

at people just to see how they go down."

While she was staying at the Inn on the Park during her recent visit to London, one of her American clicums areas in the middle of the control o clicits rang her in the middle of the night and kept her talking for three houts.
Whot about? 'Oh, they weated

to know whether, when they opened their fourteenth factory in 1987, that would up their revenue by 25% or 30% or something like that. I ended up getting only two

It doesn't show. Her presentation to the Unix conference was energetic and atimuloting and controversial. Prohably many of her listeners would have been surher listeners would have been surprised to learn that her acquaintance with computing stretches back only to December.

Gradually people began to think there might be something in what she was saying after all. So she set

I bought myacif an Apple II for

The following year she worked for six months selling first genera-San Francisco as a way into the

A FORKLIFT truck is driven from one end of a atraight ramp to the other, and takes 25 seconds for the journey. The route involves 24st up a slope, 36st down another alope, and 12ft on the level.

Then the truck is turned round and driven back the other way, taking 28 seconds because there is more uphill gradient to negotiate

The mathematically-minded ruck driver works out that the initiol 25-second journey would have taken only 23 seconds if there had been just 12ft up the slope,

Assuming that the truck always travels at a constant speed, varying according to whether it's going uphill, downhill or on the level, what are these three rates of progress, in ft per second?

FROM COMPUTER WERKLY OF MARCH7, 1974; Reay Atkinson, director of the Central Computer Ageacy, said he hoped that, despite cuts la government spending, it would be possible to keep expenditure within the computer services industry running at £2.5 million during 1974/75.

The only successful computer candidate in the February General Elaction was Barry Henderson (Con), who worked for Univac at Livingston. The Xerox 550 and 560 systems were released in the UK by Rank Xerox Data Systems. The number of computers is US government. number of computers is US government dajuartments rose from 6,731 to 7,149 between July 1972 and June 1973:



YATES . . . "I like to be out on the edge."

around saying: "Unix is gonna be big. Very big. We're talking about maybe \$9 hillion of hardware and safety and in 1985."

as if she had just been told by them to write it out 50 times — which ahe lasists she has not been. As a consultant to both IBM and ATEAT she is trigged between the software in 1986."

She was told in no uncertain terms that she was wrong. But she went oa saying it.

Graduelly people became the sheet two biggest forces in the world of new technology, and a single step out of line could cost her her She was told in no uncertain

up a company of ber own to tell them why she was saying it — plus about it and I'd like to hear from some of those who said I was a lot of other things too. Jean Yates wroog. But I'm gonna start has a lot to say about the computer

There are restrictions, though.

ahe Insiats she has oot been. As a consultant to both IBM and AT&T she is tugged between the

career. Or at least, this career. She does not intend to become tied to Unix. "I'm glad I was right about it and I'd like to hear from looking for something else now. I like to be out on the edge."

Thia is followed by a statement She repeats: "I'm under a non-disclosure agreement with IBM" of what appears to be the Yates philosophy: "If there area't a lot of

and all is well

DOWNTIME I

Bum's back

COMPUTER people say some pretty daft things sometimes, but you'd have to go a long way to beat the latest utterance of Rod Canion, president of Houston, Texas-based Compaq Computers,
"Bum's back, and we couldn't

be happier," said Canion. This can be partly explained by the choice of "Bum" Phillips, des-cribed as one of the "winningest" coaches is American football, ro

open a computer show at which Compaq is exhlbiting. Burn himself can also come out with the occasional gem: "I may be country boy, but I didn't get to the top of my trade without keeping up with the times. We couldn't run the modern football team without computers. Life ia just too

complex."

What a dull game accer is by comparison. All our lot say on Match of the Day is "Well John, I hit the ball and there it was in the back of the oet." Nary a mention

Damned lies and white lies

SITTING in waiting rooms can be a boring passume, particularly if there is no copy of the latest Com-puter Weekly on the coffee table. If, however, one keeps one's ears open in rabbit-like atteouveness, interesting little minerates. interesting little anippets can come

ooe's way.

So it happened to me last week as I sat waiting to meet the managing director of one our promising young microcomputer compaoies.

One of the company directors stopped at reception on his way out of the office and told the receptionist that he was popping out for a few hours to bank some mooey and do a few chores. "And by the way," he said, "if Mr Bloggs shows up to pick up that software he wayted, tell him was are having a bittle problem. We can't quite get the printer interface right. Apologise for me not being here, but tell him I was colled out

dealing with his problem, I'm to of course, but he's not to know. The

- 五萬重量 >-

They say it's tough at the top, but it is even tougher at the borom working your way up.



A damaging peripheral?

THERE cao't be many product on the market which are totally compatible with every machine from a ZX81 to a 2988, but Brussels-based World Trade in Computera (WTC) is importing just such a product.

Aimed at reducing user stress,

the Bit Banger enables you to get back of the computer with (link) or no risk of damage. Striking a computer during o ra. ment of allow the operator a frish chance to try again with o different psychological approach," says

ordon Smith, president. Bit Baoger is a foam-headed mallet. 1 illustrate the Computer Weekly version undergoing tests of our Behemoth 9000 mainframe.

State-of-the-art?

YOU know that atate-of-the-art. aystem-of-the-future, most-advanced-computer-known-to-man thing, the DEC PDP-11, which the Pentagon is so anxious must not fall into Kremlin hands or we are oll doomed? Well, according to Professor Martin Healey of Cardiff University, its architecture is "obsolete". Which of them is right? Answers on a postcard please to Caapar Weinberger, care of . . .

prospective buyera an iodependen

The move towards a more posi-tive approach to standards in the UK has resulted in several British

British company has already com-pleted its validation and the VSR is

currectly available from NCC. A

further three companies are

preparing themselves for formal

be validated before the year-end.

idation and will almost certainly

validatioo service. One

Validation trend comes to UK

.. THE MICRO MARKET

LEADER EMERGED

ment of Health was spending \$12 million a year on leasing hardware but was spendlog \$50 million a year on Cobol source code conver-sion due to incompatibilities between various compilers. It is believed that these exorbitant conta incurred on software conversion, compared to hardware cost, also apply to Fortran programs.

One of the major problems fac-ing any computing installation when it decides to change its computer is altering the current program source code to compile on the new machine. Since 1966 there

extent that program portability was becoming a joke.

In an effort to reduce conversion costs, the US government introduced a scheme to validate compilers against their respective was for the conformance of

Liveware

for several years, while in the UK a Cobol compiler validation service was set up in early 1983 and a similar service for Fortran in Octo-

Both services have been introduced in the UK by the National Computing Centre in close liaison with the Federal Software Testing Centre (FSTC), which is responsi-ble for validations carried out in the US. As NCC uses the same see page 69 for solution.

10 YEARS AGO

FROM COMPUTER WERKLY
OF MARCH 7, 1974 Reay Atkingagon, director of the Central Comprocedures and test auites as the Americans the results of valida-

MY PRIEND SAID

HE'D WAR UNTIL

So what will it be next? Genetic

engineering? Biotechnology?
"I don't know. Maybe. I'd like

user likes and dislikes. I think that

will be my aext step."
Her firm, Yatea Ventures, has

about 100 customers now, including most of the main hardware

well-known namea is the software

character and the outspokenness of

her views, this is quite an achieve-

Considering her flamboyant

facturers and a number of

the resulta are analysed and drawn up as a Validation Summary Report (VSR). When validation became estab-

lished in the US opportunities arose from which both users and implementors could derive real benefits. The VSR could point out possible incompatibilities which the compiler had with the stan-dard, and genuine errors that the programmer to write programs to the language standard while avoid-ing the problem areas defined in the VSR.

This resulted in program de-velopment costs being consider-soly reduced as the programmer

" JUST AS HE DID

WITH TELEVISION

standards and then atopped federal agencies purchasing a compiler uoless it had been validated. This tran standard. These teats are a line the compiler. Training collectively knowo as the Fortran Compiler Validation Suite (FVCS). Occe these tests have been ruo he resulta are analysed and drawn

A machine change no longer necessitated large source code changes, providing both the old and the oew machines had their respective compilers validated. With users oow free to choose from a wide variety of manufacturers not only financial savings were implementors may have failed to could be based on suitability, oot detect. It became possible for a compatibility. made but hardware decisiona

entora realised the many implementors reassed the benefits of validation as soon as they were given such a comprebeosive test suite for a fraction of the

cost of developing their own.

The validation report could be used as a marketing aid giving

.. NOW HE'S LOOKING

FOR AN INTERFACE

WITH HIS 405-LINE

SET!

The Central Computer and Telecommunications Agency has now included compiler validation into its procurement procedures and many users are becoming aware of the importance of programming language at andards. You may be one of the fortunate DP installations that already has a validated compiler. On the other hand, you may not. If so changing your source code could be more expensive than new hardware.

David Littlewood David Linke east works in the Saile

deads Division of the National Vent

Thursday, March 8, 1984

that the demand will not be met.

to the introduction of microelectronics."

the productivity to give us more time".

rising to 1,000 in 1984.

called for a £200 million switch in resources to ensure an

adequate supply of properly educated and trained eogi-

neers. It says the shortage has occurred because economic

pressures have forced industry to reduce expenditure on

That view is echoed by the PSI report, which says a large

There was one small glimmer of bope. A report published

on Monday by the Institute of Manpower Studies, which

eyslustes the government's "new blood" initiative to in-

crease post-graduate courses in information technology,

finds that it will go some way towards helping firms overcome existing shortages of information technology

manpower. But the numbers are small - only 200 in 1983

There is a growing consensus as to the nature of the

problem, which rests with the two separate issues of

training and education. There are differences as to where

the solution lies: the Engineering Council's recommende-

tion to re-allocate resources from one sector of education to another does not seem to us to achieve anything better than mske do with a bad system.

Consensus, however, is the first step towerds problem

solving. The skills shortage which faces our industry and

the country as a whole is a subject we will return to often.

And an industry as clever as ours should get its heads

Small fry feel the heat

"ENOUGH is enough" seems to be the message from IBM

The 20% price cut on its PC announced in the UK last

week is further evidence that IBM is getting tough with the

small fry. Legal ections against Corona, Eagle and

Handwell in the US were instigated by IBM when the three companies introduced products which IBM considered to

be rather too similar (and cheaper) than its own.

The official line from IBM for the 20% cut (and the 7%

reduction on the XT) is that production at Greenock, where

the PC and XT are made, is now running smoothly enough

to bring manufacturing costs down, and IBM wishes to pass

It would seem more likely, however, that the aim of the

men from Armonk is to initiate a price war against the ever-

growing number of IBM-like micros on the market. There

can be only one winner of such a contest now that the IBM machinery is well and truly rolling.

Having shifted around 30,000 PCs in the UK at the full

price, the company has now chopped a fifth off the price tag to open up the market at the bottom end. Apparently IBM

has sold as many machines as possible at the full price, and has instituted a price cut before sales begin to level off, to

One thing is, however, certain: micro companies that want to compete with IBM should ensure that they offer more than a better price.

THIS week's example of the strange things people say about computers was sent in by B. Twissell, of Coveoury, who wins £5. Imagine the simplicity of programming by just one touch, safe in the knowledge that the computer will never let you make a

Advert for computer-controlled washing machin

together and come up with an expert solution.

to the world's micro makers.

on the sayings to its customers.:

keep the bandwagon rolling.

1984 and all that .

number of companies rely on outside recruitment.

Software prototyping Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS is not just American

LETTERSI

I WAS most pleased to see signifi-cant space given to software proto-typing (Guy Thompson, Computer Weekly, February 16), a technique by no meana limited to the US. I would like to supplement Thomp-son's excellent article by pointing out another major factor in the rise of those methods.

The availability of sophisticated but easy-to-use data networking We must solve this skills shortage WEEK by week the evidence that Britain is felling behind because of a shortage of skilled personnel continues to

but easy-to-use data networking products means that the applica-While demand for electronica engineering graduatea, trained programmers, analysts and other data processing tions development ataff must now accept that a wide range of casual staff grows, the cuts inflicted on higher education ensure users, both locally and throughout organisatioos, will wish to have The latest Policy Studies Institute (PSI) study, besed on a access to their programa at some

survey of 1,200 UK factories, states: "The lack of specialist These usera, who may welt be corporate executives, will demand simple command functions and microelectronics expertise was the difficulty mentioned spontaneously more than any other as a major impediment screen formata that are readily in-Last week, the Computing Services Association met in

Bournemouth, end a constant theme was the shortage of raw computer power, it may thus be more cost-effective to optimise trained staff for key roles in small and medium-sized firms.
The managing director of Pactel spoke of the "vicious circle of not having time to trein the trainees who would give us efficiency ar the CPU: The Eogineering Council was also heard last week. It

To conclude, prototyping is

therefore the natural counterpart to the increasing dominance of telecumnunications in the compu-

ter area. TONY RICHARDS Marketing Communications

Computer and Systems
Engineering
Watford.

Equal opportunities

ROBIN WARD reports (Computer Weekly, February t6) on the support given by the EOC to the Davidson Centre in its project for interesting girls in the opportuni-ties available to them in information technology.

From personal experience, while I would endorse fully the points made in the last paragraph of Ward's letter in which attention s drown to the need to raise the level of awareness among parenta and teachers, it is becoming increasingly apparent that outdated society, and therefore at work, are still widely held both in the home

and in many of our schools.

It should be recognised also that the basic skills required for working with the new technology are quickly acquired and that for boys and girls it need not son's NCC study Commercial

necessarily be assumed that a pro-fessional qualification is the only key to a worthwhile ond exciting iob in this field. DOROTHY ROSS

XXX 9XX

Weekly, March 1), but Mr Vliesira was right, XXX 9XX still exists. Yes, there was a good reason for

changing NOR (Norwich) in 1974. Not only was the second part of the code not 9XX but the remainder of Norfolk could not be added until the code was changed.
But GIR (National Giro Centre)
and NPT (the ceotre of Newport, Gwent) both still exist and pre-

sumably the same incentive to

March I report on the NCC Electronic Mail aurvey?

change them doesn't exist. So XXX 9XX lives on. C. G. PEACHEY Hemal Hempstead

topics. All letters must be accompa-used by the writer's name and address, not necessarily for publication. Letters may be cut.

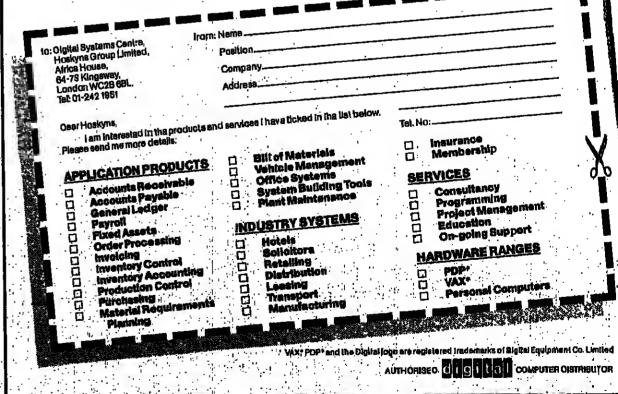
Midwich Computers

Rickinghalt Suffolk.

Geisco electronic mail users MAY I point out an error in your Electronic Mailbox Systems con

The Geisco Quik-Com system Gelsco Limited Kingston-upon-Thames





1964 01984

MAKING COMPUTERS WORK FOR YOU

hoskyns

Industry minister John Butcher talks to Nuala Moran about microelectronics and Microquest, a bright competition to involve young people in technology

microelectronies applications will be the lifeblood of the future and Microquest is an annual competistrong supporter of the contest, people to think creatively about

"It is vital that young people coming into industry should be aware of the impact and potential of the technology. Microquest is excellent for developing that

Butcher also stresses the importance of microelectronics to industry. "Microelectronics is a basic dustrist tool. It gives scope for the development of new or improved products and processes in makes possible increased pro-ductivity, better, chesper and nore reliable products. Firms not

"We are making progress on all fronts. In terms of raising awaretion designed to find them. Indus-try Minister John Butcher is a logy, some 300,000 people have attended MAP awareness activities, such as seminars and

> places annually on short courses is running at about 30,000, com-pared with only 2,500 in 1978. Over 4,400 MAPCON feasibility atudies have been offered support, and some 3,200 completed.

> "Finally, over 1,200 applica-tions for project development support have been sporoved, of which nearly 500 are complete.

"A PSI survey carried out in 1981 showed that 30% of the manufacturing industry was using or plenning to use microelectronics. The latest PSI survey shows a

"MAP's usefulness is borne out

by industrial views recorded in the PSI study, and by the continuing demand for MAP assistance. The 1,227 applications for project support approved so far have a total value of \$200 millions, a significant contribution to the modernisation of the UK

manufacturing industry," he says.
DoTI introduced MAP because of s concern that British companies were lagging behind their international competitors in introducing new technology.

"We have initiated comparative studies in France and Germany to

is in a position to shape technologi

Butcher dismisses criticism the shortcomings in the MAPCON feasibility studies have limited the progress that might have been made by MAP, because of inadequate support of projects.

"For those potential users who were n little fearful of getting involved in new technology, MAP-CON has provided a painless way of testing the water. It has brought new rechnology to those industries that have been resisting the blandishments of information techno-



How you can win £50

COMPUTER WEEKLY IS joining with the Department of Trade and Industry and Williams and Glyn's Bank to promote the Mieroelectrooles Application Project (MAP) the government scheme to en-courage British industry to use microelectronies in products and processes.

A special £50 Computer Weekly prize will be awarded to the applicant who submits the hest entry to the month up the end of June.

Microquest is an annual competition with a £1,000 first prize, to find innovative ideas from young people between the ages of 16 and 21 on bow

Entranta to Microquest must submit a 2,500 word re-port which identifies a new use for microelectronies and explains how it could be imelemented. The idea is to roduce applications that will mprove and develop original rocesses or products, and he organisers streas that the applications must be practi-cal and therefore realistic in

It is hoped that employera exploiting it will simply lose the

ompetitive race."
Microelectrooica Application
Project (MAP) is DoTI's scheme to encourage the use of inferopro-cessors by British Industry in its products and processes. It was set ip in 1978 in response to widespread concern that the UK was lagging behind its international competitors in recognising the significance and potential of microelectronical

MAP had at initial hudget of 155 million and another £30 million was added to 1982.

Speaking on the future of MAP.

Sucher says that £18 million of
the £30 million promised for the
scheme in November 1982 has
been spent. This brings the sum
spent on MAP up to £73 m.

there will be allocated. There is a long way to go before the current allocation. allocation runs out. We will be considering this in the light of the 1983 Policy Studies Institute (PSI) report on microelectronics in British industry, published less British industry, published last Week." (See front page.)

projects that are submitted and all applications must be and all applications intust be approved by the employer. Senior people who read Computer Weekly are encouraged to sponsor young people in their departments.

All entries will be studied by

Do'TI's team at the Warren Springs Laboratory, which is responsible for assessing applications for MAP grants. Entries for the Microquest cao be obtained from any Williams and Glyn's Bank or Royal Bank of Scotland Trade and Industry at Mieroquest, MAP Centre, Freepost, Room 514, 29 Bres-

SBR. All entries will go in the monthly Computer Weekly special competition as well as the main competition.

Geoffrey Fleid, marketing manager of Williams and Glyn's Bank, explains that the hack decided to take part in spoosoring the competition because: "MAP is trying to attract small and medi sized businesses to take up its grants, and that fits

been dramatic and considerab and the figures speak for them-selves. But they also confirm that there is a lot still to be done; many

"This reinforces the need to encourage engineers and technicism coming into the industry to b aware of the potential, and that's why we're supporting

smaller firms are not yet persuade

of the relevance of microelectron

According to Butcher, there

ANALYST PROGRAMMER TO PROJECT LEADER (+ CAR) IN TWELVE MONTHS? **COULD BE YOU!** SEE OUR AD: ON PAGE 37

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NAS can deliver the 7380 now, whilst others simply make promises. Our promise is that once you experience the 7380 and our after sales service, you will never again look for alternatives.





ounces the appointment of John Dilworth (above) as general manager Northern Europe. He will manage Geac's operations in the Benefix and Scandinavian appointed Southern area sales countries from Geac's offices in executive, with responsibility for Amsterdam. Dilworth was previously European marketing manager for Information Processing Products. David Thomas, Geac Computers Europe group continercial director, will be responsible for Furupean product. ponsible for European product support scrivities in addition to his

Neville Barber has been appointed product manager at Peach-tree Software International, with responsibility for the Peachtree Basic Accounting System (PBAS). He moved to Peschtree from MSA where he was business consultant. where he was business consultant.
Carl Chilley has been appointed manager of the systems engineering group at Peachtree Software International. His previous experience has been chiefly with software. At Rank Xerox he was Chris Jamea (above) is the new managing director of Reliance senior software engineer on managing director of Reliance

■ R&H Systems liss appointed Alan Dunkerley as sales manager.
He comes from Gould SEL where
STC Business Systema where he he was marketing manager for in-



■ Andrew Reld-Moore (above) has been appointed international has been appointed international marketing manager within Computer Automation's Naked Mini Division (NAID). He will be responsible for sales of NMD products throughout European and managing director of Moody Tottrup International. ducts throughout Europe, excluding Germany and the UK.

Drapor as new product marketing Before joining Computer Automation, he was a territory aales manager with Triumph Adler.

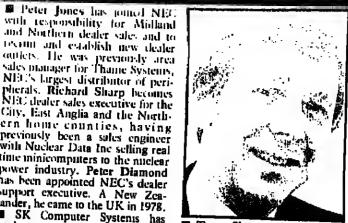
outlets. He was previously area sales manager for Thame Systems, NEC's largest distributor of peri-pherals. Richard Sharp becomes NEC dealer sales executive for the City, East Anglia and the Northern home counties, having previously been a sales engineer with Nuclear Data Inc selling real time minicomputers to the nuclear power industry. Peter Diamond has been appointed NEC's dealer support executive. A New Zealander, he came to the UK in 1978. ■ SK Computer Systems has made two appointments in the Systems Division. Clive Richards, who becomes manager, was previously a field service mar-



Systems, the spearhead of a GEC thrust into information technology was communications systems director with responsibility for STC's approach to office automa-

The Reliance Consulting Group has appoloted Dick Harrison as chalrman and managing director for Leasco Software, following the return to the US of the previous chairman Fred Schriever who is also president of the Reliance Consulting Group. Harrison, who has been acting as chairman in Schreiver's abscoce for the last two years, takes over immedistely fol-lowing David Markby's resignation as managing director. Also announced are the appointmenta of Gordon Crawford as director and Dr Len Barlow as associate director. Harrisoo's other appointments include director and vice-president

Drapor as new product marketing manager. He has worked in this field for Control Dataset, Magnetic Media and CDC.



Terry Shurwood (above) has appointed to the board of Oric Products International nt Aseot. He joins Oric as sales and marketing director, tsking over from Peter Harding who assumes responsibility for new vertical mar-kers including viewdata. Shur-wood is a former national account manager for ITT, general sales manager for Ingersol marketing for Whitehead Mann, Electronies and, most recently, and had beld marketing and sales and marketing director for Mattel Electronics (UK).

DIARY

Visit to College of Building, Glasgow. BCS Miero Sub-group. Details from Mrs J. E. Fleming on 041-887 0131, ext 343. Teletext. BCS Scottish WP and

OA Group. Speaker from British

Celecom. Music Room, Staff

Club, University of Strsthelyde,

Developing Online Applica-tions. Five-day residential workshop. BIS Applied Systems. Queens Holel, Eastbourne. 1630

plus Vst. Details from Cherry Big-

Structured Systems Design.

Five-day reaidential workshop.
BIS Applied Systems. Bedford
Hotel, Brighton. Details from
Cherry Bigmore on 01-267 9237.
Perspectives. Systems Designers
Ltd five-day course. Frimley Hall
Hotel, Camberley, Surrey. £550

MARCH 12.

MARCH 12-16

more on 01-261 9237.

■ Jeff Dukes, managing director of Inform Systems since he started the company in 1975, has se, up and become director of the new Inform Multinational sales department. Bob Maeleod becomes managing director of Info-tron Systems, liaving been UK sales manager for two years. Tony Smith takes on the role of general manager and company secretary of Infotron Systems. He has been with Infotron for five years as financial manager, after several years' experience with Plessey at Poole. Mike Hiard becomes London area sales manager after 18 months with Infotron as a sales executive, and Ted Richardson, who joined Infotron Systems ss engineering manager three years ago, after Il years with British Telecom, now takes over as European marketing manager.

Iohn Preaton has been appointed marketing consultant, Datasolve Information Servicea. Previously, he was consultant in promotional positions at Calcomp, Itel and ICL. a market aupport representative.

plus Vat. Details from Keith Evans on (02514) 22161.

quirements Planning. MSS course, Worthing. Details from Marcia

Introduction to Cobol; and Co-bol for the Experienced Pro-grammer. MSS courses,

Prestel Software, BCS Birming-ham. Speaker from British

Telecom. Strathallen Hotel, Hag-ley Road, Birmingham. 6.30. Strategy of Managing the Micro

in Large Organisations. BCS Chel-tenham and Glos. Peter Haine,

rammer. MSS courses, Forthing. Details from Marcia

Gray on (0903) 34755/6, MARCH 12-14

Gray on (0903) 34755/6.

MARCH 13

Microcomputers in Material Re-



tants Limited), a computer burea and aervice company. He joint from Systemshare, a business unk comprising 40 computer specialists within NEI-Peebles where he was Advanced Data Communications has appointed Andrew managing director with responsi-bility for providing a variety of Houldsworth as sales executive for London and the South. He was computer services. previously with A. M. Varityper as

Ferranti Cetee Graphic, the Scottish-based CAD/CAM arm of the Ferraoti electronics group, has appointed Tor-Hugo Torstelness as publicity and promotions executive. Norwegian bora, he joint from Ingersoll Rand in Mancheter where he was promotions manager, io ternational operations.

Feshoo Systems bss sppointed Paul Streets as a sales executive with special responsibilities for Data Cootrol system sales to banking and related industries. Stress was previously with Bankers Trus in the City. His earlier experience was with Tesco, CitiBank Saving and Nat West. and NatWest.

Michael Young has been appointed managing director for Systematics International Microsystems. He joined the company as UK marketing manager in 1980. Previous posts include manoging director of Sentinel Compu-ters (Europe), and marketing man-ager for Computerworld Boston.

The BBC Microcomputers Pro-

ject. BCS Chester and North Wales. J. Loveland, BBC North-

ern. Hayden Rees Room, Theatr Clwyd, Mold. 7.30. Cobol 84 and Beyond. BCS Coventry. John Triance, UMIST. Room N16, Lanchester Polytech-

nic, Coventry, 7.30.
Office Automation - Promises and Pitfalls. BCS Manchester. R.

J. Taylor. Office Technology Ltd, St James House, Peodleton Way, Salford. 6.15. Numbers limited;

contact N. Beattle, 061-436-5000.

Visit to Cipher Systems. Sof

ware in Video Terminals. BCS

North Wilta. Contact P. Potten of

Programming Methodolog BCS Teesside. Richard Mitchell

Hatfield Polytechnic. Computer and Mathematical Sciences Build

ing, The Polytechnie, Middles-

Swindon 29879.



Package Programs Ltd (PPL) has appointed four more consultants for its Finoncial Systems Division:
Shan Merrits, Peter Ryder, Jeremy Heading accountant, the last four with Bowater Scott where he used PPL's General Ledger System. Heading (second right) is a senior technical cansultant specialising in IBM Merritt (left) has 10 years' data processing experience, having joined PPL as a senior client support consultant from Bayer UK where she spent a year in systems analysis and design. Ryder (second left) is also a senior client support consultant, and has had 10 years as a systems

Receivable System. Reed (right) has jained a soles support consultant, having spent the last four years with Ranh Xerox in the marketing division.

MARCH 13-15

MARCH 14

Lanchester Polytechnic. Bat and Ball Inn, Churchdown. 7.30.

New Methods for Dala Security, BCS Croydon, Donald W. Davice, National Physical Ulster Polytechnic, Belfast. 2.30.

Laboratory. Maple Room, Fairfield Halls, Croydon. 7.15 for

Now Hear This. BCS Harlow.

Jeremy Peckham, Logica. The Norfolk Room, Saxon Inn, Har-

Advanced VS APL. Cocking and Drury three-day course. £300 plus Vat. 16 Berkeley Street, Loo-

don W1. Details from Alice Ingle

Jubilee Lecture, Computer Evo-ution. BCS. Dr G. Bell, Encore

Computer Corporation. Royal Society; 6 Carlton House, Terrace, Loodoo SW1. Ticketa £10 (£7,50

BCS members), including Vat, from Projects Office, BCS head-

from Wang (UK).

Use your users

PROJECT MANAGEMENT

ter project depends on the users. It is the users who should finally accept (or reject) the system. Even more importantly, it is the users who either oil the wheels of

Communication between expert and user is essential.

the system, so that it runs smoothly, or put spanners in the works so that it grinds to a halt. The analysts have plenty of discussions with users during the layestigation phase of a project. It is up to the project manager to ensure that communication is

maintained in the time between conception and birth of the This may reveal needs for changes (the bane of the system developer's life) earlier than would otherwise be the case, but at least these problems are tackled sooner

than they would otherwise be. The big advantage is that the users re-maio involved, and so improve the chance of the project being successful. Of course, the users of a computer system range from the person who types in the data to the man-

aging director, who uses the repona to keep staff on their toes. Not all of these people will be over-enthusiaatic about the system, or see its relevance with much clarity. Nonetheless, the overall success

of the project still depends on them, so a good selling job is well

Computer people often consider temselves to be highly intelligent technocrats (very occasionally this has some justification!). It is easy for such people to think they know what is best for the users. After all, they argue, what can the fuddy-duddy old users, who have used the same methods for the past five new elever system?

New elever system?

Unfortunately, braioy technocrats usually forget three important points. Firatly, lack of knowledge of bits and bytes most certainly does not imply lack of intelligence. Secondly, experienced users have probably tried several wayanf improving methods and have found that the current approach is the best, bearing in mind all practical problems that arise. The users are therefore well

and all practical problems that arise. The users are therefore well informed about what is required and what will work.

Lastly, and perhaps most importantly, it is the users who accept or reject the system and make it a success or otherwise. make It a success or otherwise,

The project manager and team should be building up users' confidence throughout the development period. To do this they must communicate in language they understand. They must eschew the use

of computer jargon (unless talking to a user's 12-year old child, who probably understands it better

han the project maosger). The "no jargon" rule doesn' work in reverse: the users will expect the project manager to uoderatand their jargon, as a sign that they can grasp the problems and know what they are tslking about.

An acrimonious end to a project ean often be predicted during the design stage if the analysts do no involve users fully.

Analysts only get a quick overview of the existing system and future requirements and then disappear Into their ivory tower to design the perfect system. When designed, the system is confidently unveiled to what should be grateful users, but who appear, to our heroes' surprise, to be cantanker-

ous Luddites. How much better it would have been to have worked with the users throughout and made use of their practical knowledge and best

> A word in the DP manager's ear from a highly placed user can work wonders

ideas. At the unveiling ceremony the "Luddites" would have been absent, and in their place would be people of vision and co-operation. What attitude is established a

What attitude is established at the atart will tend to persist throughout the project's life. By using the users in a spirit of cooperation problems will be jointly overcome. If co-operation is absect, problems will be gleefully exampled and happilly examples as revealed and happily exaggerated by users.

The main reason ia to help eosure that a good, practical and successful system is implemented. Frieodly users can also be useful allies in the political eovironment in which the projec

Is being implemented.

If, for example, extra help or machine time is needed, a word in the DP manager's ear from a highly placed user can work won-

To atummarise, the project manager should trest users as part of the team, in order to make a succeas of the project. This needs effort on the part of the project manager, but it, will be repaid many times when the project is completed on time.

The project manager who fails to get this user co-operation will find the work longer, harder and less effective. Pragmatist 1

We finish our two-part series on how to manage projects successfully

Just keep talking

that covers the written and spoken communications between individusls, as well as the transfer of data between computer and terni-nal and vice versa. In this article I am not concerned with hits, bytes and line protocols - the only rele-

vant protocol is that of politeness. The ability of people to communieate has been one of the most important factors in reaching our current level of civilisation. Similarly, poor communications have been the cause of many tragedies, ranging from major ones such as The Charge of the Light Brigade, to minor unes such as a poorly specified sales ledger system.

The apocryplial story of the message that was sent from the war front, saying "Send re-inforce-ments – going to advance", and received as "Send three and fourpence - going to a dance", tells us more than how cheap it was to have a good time in those days.

two-way process.

Both sender and receiver of the

municating, but they were not. What can be done to ensure that the correct message gets through? One way is to send information

back, so that the originator can tell overall success of the project. that the proper meaning has been received. More than a mere acknowledgment is needed. An scknowledgment is passive and only signifies that the recipient has received some information.

A more explicit response — for example, "Where is the dance?" — would have highlighted the misunderstanding, before pucket money was dispatched to the attacking troops!

Communication between com-

piller expert and the liser is important throughout a project. It is particularly easy for the project manager who is primorily n computer person to think of the project n terms of analysis or programming only, whereas these are parts of a larger project that includes the end-user as well.

It is no good the system heing written on time, if the system test

responsibility, is not ready, or if the user staff are not trained. It is only by regular communication with everyone concerned that the project manager can ensure the

laid mainly at the door of the One reason for poor communications herween computer people and users is the fact that they may not be on the same wave-length. Sometimes this is just a matter of the jargon used. Those of us who have worked with computers for some time find the line between English and computer jargon hard to define. Consequently we occasionally use words in

everyday speech that only a com-puter huff would understand. As well as the language used, ii number of either factors affect the quality of communications. For example, privacy and an unfurried approach are needed when appraising or enunselling stuff. Personal feelings are also

treinely important. In one case I know the only time

overbearing book, rather than at that of the fearful employee. To encourage communications therefore, the manager must be

outside supplier. Apait from being

a poor way to run things, the cusu-

ing explosion from the boss was

embarraying for all present. In me

view the blame for this should be

accessible, approachable and sympathetic. However, he or she must also ask the right questions and he tenacious and forthright enough to ensure that truthful auswers are obtained. While we can do all we can to custire good communications, the

fact remains that people don't listen all the rime, and don't te member everything that is said. It is therefore desirable to agree important points in writing.
This has the advantage of forc-

ing people to think carefully, as are generally more cambons when being asked to commit some thing to paper.

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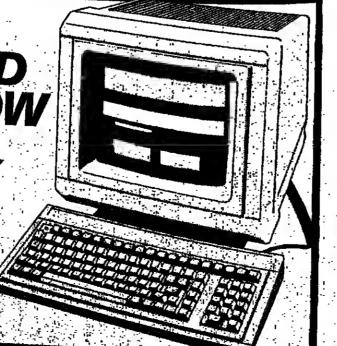
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This article is an amended extract from Granada Books' Database Management Systems, edited by R. A. Frost

the first time for choosing (or what is more likely, leading the project the evaluation and selection study to choose) a database management system, you can be excused for initial feelings of worry, then after you have had time to think about it, terror! (Definition of "confidence"; the feeling you have dence": the feeling you have when you don't really know what is

going ou!)
There are many different situations and no one set of rules is appliesble everywhere, but an atoplicable everywhere, but an atmosphism the been made here to des-discussions may be held. A

The task of choosing a DBMS could be thought of as a fairly acamatching of teclinical requirements agsinst available features. It cumstances and constraints of each them be arranged? ituation are key factors in the whule process,

software currently exists and n will the list be selected? If others wide choice is available would are to be involved, will they be seem ideal (although this has its available st the required time and own drawbacks, such as learning factors still to be incurred and sometimes unreasonably high ex-pectations) but more often than not there are constraints in exist-

For example, the boss or some influential colleagues may have strong views on the ideal solution. They may have similarly strong views on DBMSs to avoid like the plsgue, or they might think the whole exercise is unnecessary and are properly informed and a waste of the company's time and

Specific, high priority applications or certain users may be driv-ing the project, and their DBMS requirements may not be consis-tent with broader aspects of the company's longer term DBMS

There may be a need to link any new DBMSs or other software -

The time spent sorting out any misunderstanding or disagreement is nothing compared to the time lost later if this is not done

the choice may not be as wide as it

Recognition of the circumstances and real constraints is fundamental and it is vital to clarify and document the objectives and

scope early on.
When one is participating in (and particularly leading) a DBMS requirement study, it is essential that there is a clear understanding (a) What the objectives are:

to assess the need for a DBMS? to recommend most suit-

(b) What tasks are involved: visits to vendors and other arranging | presentations,

involving other DP staff in iho study (c) The scope which exists for the

is time allowed to go on

what are the capital cost These objectives and scope should be documented in the terms of reference for the study.

ried out and a documented plan for

Terms of reference form the basis from which a list of tasks should he drawn up. Where others are involved, it is

important to identify early on what information they require, eg DP project leaders and managers may be asked for their database requirements in questinnnaire cribe an approach which should be consensua of agreement may be generally applicable. DBMS vendors can be contacted.

Consideration should he given demic exercise, involving the to how the list of contenders will be arrived at - what sources of of each facility. Make sure enough information will be used? (Data- ume is allowed to gather these is not that simple, however, and in the real world, the particular circular circular

There are uther questions: what the process.

Will be the procedures for selection snd how long will it take? How are to be involved, will they be do they know what their remit will be? What preparation is needed to arrange meaningful benchmarks? Some text books say that the

ideal selection team comprises systems analyst, programmer operations person, system pro-grammer, business analyat, etc. lt works sometimes, but such committee-type approaches often fail - the most important thing is to ensure that all relevant functions

A better approach might be to have a couple of experienced people driving the project and reporting to a project management committee at agreed checkpoint This reporting is best done in the form of presentations/meetings where questions can be asked and discussions held, rather than formal reports which are more timeconsuming and restrict commu

nication to one direction.

The first step in the whole exercise is to propose and agree the terms of reference. It is essential to have the right framework agreed at this stage before any time is spent on subsequent activities.

The time spent sorting out any misunderstanding or disagree ments is nothing compared to the time lost later if this is not done. The content of the terms of reference can be summarised as being about aims, activities to achie the aims, names of nominate contacts, resources, constraints timescales and reporting mechan

Ensure enough time is allowed for agreement on these issues - it is the foundation for the rest of the

If you are fortunate or someone has planned in advance, the data requirements have already been identified. More than likely they base not, and depending on the organisation and on how far computers have been used, this process could take a considerable amount

The information needed at a high level, is what areas of the company need databases (eg finance, engineering); the use to which these databases will be put choice of database:

must it be a proprietary system?

must it be currently in use?

databases (eg online, batch, distributed); whether end-users use the databases (leg online, batch, distributed); whether end-users use the databases (eg online, batch, distributed); whether end-users use the database (eg data dictionary, testing facilities, prototyping tools, etc).

This is another uses where agreement is needed from other parties. Make sure you now have a good idea of how much groundwork has already been done before proposing how long this process.

will take.

Compiling the initial list of contenders and drawing up the shortlist involves matching rets and constraints agains the systems of the market.

The list could be much longer than might be thought for an IBM sentations and benchmarks; installation and a free choice of DBMS software, but it could be shorter than imagined if the lardware is not IBM. In the latter case, the initial list of contenders be the same list as the short

In the former, make surc enough time is allowed to satisfy yourself and others on what the key factors should be for entry to the shortlist. It can be dangerous to draw up the shortlist by simply ticking off requirements sgainst a set of DBMS facilities.

Try to obtain a description of each vendor's system from an independent source, with a summary

Evalusting and selecting from the shortlist is the climax of the exercise, and the grouping of a difficult to arrange presentations number of activities. These in and meetings at times to suit clude: informing the selected vendors that they are on the shortlist dors that they are on the shortlist going by getting views on vendors' nary, a generalised query lan-and will be invited to present their presentations out to those at-

products; organising vendor pre-sentations and benchmarks; tending quickly after the presenta-tions and ask for an early response. holding interns! meetings to discuss the various systems following up queries and obtaining further information from vendors; recommending the DBMS to be installed to the project management committee; and getting a decision and informing all those

A large element of the work a

Certain rules should be drawn up to engure as little time as possible is wasted on considering nonrunners

this stage involves other people from within and outside the company. It is sometimes extremely difficult to arrange presentations

When planning the schedule, check the availability of key people well in advance. Plan to advise people of prescutations and meetings well in advance and put re-minders of this into your schedule. Have your draft schedule agreed

by the project management committee and make sure other key people involved are aware of it. The final report will come to fruition during this stage although it should be developing throughout the process — make sure you allow time for typing, distribution and

The current trend nowadays is o look at a database handler not just as standalone pieces of soft-(which can make file handling more dependable and efficient), but as part of a set of data management tools. This tool-kit could include, as well as a datahase handler: a transaction processing monitor, a data diculo-

It is important to look at both future trends in technology and the company system development programme. This may result in certain requirements being given higher or lower levels of importance than they would have.

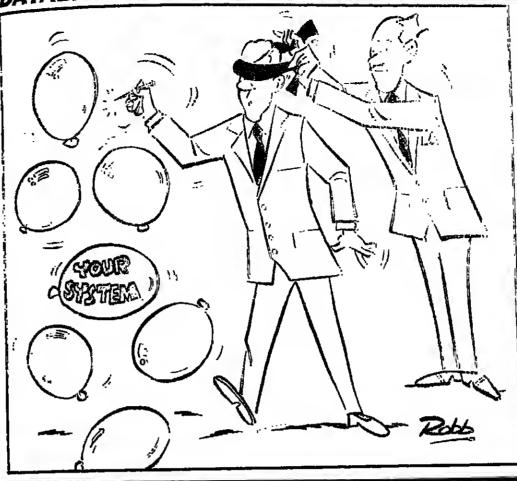
For example, is it worth considering an RPG facility which, a though excellent for what it does is now being superceded by nonprocedural language software?
The list of contenders may much larger than imagined if the bardware is IBM and freedom of choice exists. On many other

machines there are often only one or two systems available. However, quite a oumber of systems which can be compiled to most mainframes and minis are now available (eg Rapport, Mine) which is beginning to provide a better choice for some of the nea-IBM systems than they bave had in

New database management Continued on page 19

DATABASES

- 4 L I I w



Get the database right first time

From page 18

systems come on to the market at a very high rate, and it is therefore best to ensure that whatever source of data is used to compile a lirsa draft should be up-to-date and re-liable. There are companies which provide a service in information on abase and data management products, og Datapro and Aucrbach, and other sources like the Compater Users' Year Book. Sucl. facilities can be used as a starting point.

Other possible sources are: the computer manufacturer (although if it has a DBMS of its own it may not be the best source to ask about competitive products of its machine!); and other users of the ssme hardware (a list of users should be available from the manufacture, or its user group the user group may even have a database sub-user group of its

Certain rules should be drawn

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OOT MATRIX HEAD

sible is wasted on considering nonrunners. The following are key

is the DBMS available on the required hardware? If not, forge; it, unless there is a written comnutment to make it available by a certain date.

What is the quality and quantity suppart, and where is it situated? A one or two-man support team in another continent is fraught with danger - even if the

DBMS looks good What size and where is the user base? A reasonable number of other accessible users with whom common problems and solutions can be shared is reassuring when there are problems, and gives more strength in making representations

What are the cost constraints? Is there a budget for the DBMS pur-

Is the DBMS compatible with other key software? There may already be a transaction processor, data dictionary or file management system with which the DBMS

must interlink. The usual approach to compiling the shortlist is to evaluate each vendor offering against a list of requirements in a table. If every required facility was of equal importance, value and relevance the choice would automatically result from this process, but it is never that simple.

There are different techniques that can be used to compile the list so that it is more relevant to one's own aituation. For example, rather than entering "yes" or "no" under a heading, insert "good", "aver-age" or "poor" as a judgment of each vendor's facility.

These tables are probably best seen as a good input to the process, but the decision on the shortlist should also take account of dialogue which has been established with the vendors, how knowledgeable, communicative and helpful the staff are and, if you can manage to visit them, what estab-lished customers think of their

The shortlist should comprise two or at most three vendors to examine in detail. Now should be considered what presentations, lemonstrations and benchmark tests need to be organised and who

will be involved. This is an appropriate time to involve others who have some inluence on the decision, although hey may not have been involved so far. This means a cross-section of people with different levels and types of knowledge will be participating and this must be borne in mind when organising presenta-

Remember, you are the potential customers and therefore call the tune, so there is no teason why you should not tell each vendor what ground you want him to cover at a detail, and how long is to be given to make a case. There is always a danger at this stage that as senior napagement may be present, presentations or demos will become alestoriented, and this must always be avoided.

Vendors usually want to amonstrate their own pet system but it may be more useful to ask them to demonstrate their software working to one of your aystems specifications. As well as providing proof of technical capabilities, this tests out any claims being made about productivity of the system.

Vendors may have a genuine resource problem in getting someone to do the job, but if you can ar-range to have one of your own people to work with him and keep the activity to less than seven or eight man days, most vendors who have nothing to hide will oblige.

It is essential to follow up presentations and demonstrations im-

a view from your own colleagues. Try to hold a review a day of two later while thoughts are still fresh ni everyone's mind, and it may get things moving by summarising the presentation and suggesting some

In addition to this, ask for written comments - a questionnsire approach can be a uselu prompt for opinions. If the vendor's offices have not

already been visited, make a point of it at this stage.

onclusions from it.

By being on the vendor premises, meeting the staff, and seeing the environment in which they work, useful impressions will be formed. It is particularly useful wisit the development centre, and not just a sales office, but this is not always practical.

A visit to user sites can be even more enlightening, however, and this is essential when seriously considering a vendor. Rather than accept a name given by the vendor, ask for a complete list of users with an indication of the type of work for which they use the DBMS.

It may not be proper to contact a user directly, but sfter deciding which you would like to see, ssk

A visit to user gites

can be even more enlightening, and this is essential when seriously considering a vendor

the vendor to arrange for you to contact it directly. Users may not always he able to spare enough time to see you, but if this is the case do not rule out a telephone conversation if it is felt that there is a lot in common.

When visiting users make sure you are well prepared and get as much as possible out of the visit, which can be helped by having a checklist of questions and topics 10

By this time you should have as much information as you need and can handle. It is possible to go or looking at new pieces of software, talking to users, and evaluating facilities for years - it has been done! Better to know your objecuves, set your timescales and keep to them, unless there are really exceptional reasons for delaying. The final considerations should

The vendor and its support.
You now know that vendor fairly well and might even have worked briefly with it. Is it the kind of organisation to which you are happy to entrust your company's data mansgement future? Remember its employees' attitudes and abilities are just as important

The product and its future. Ine product and its future. Is the product stable, but yet modern and developing? It is daingerous to go for an unproven product, but this extreme must be balanced sgainst settling for one which has run its course. There should be a bappy medium where you are not monering the unyou are not pioneering the un-known, but using a proven pro-duct with good facilities and

exciting development potential.

The role of database within your organisation. The role of other software and staff is funda mental to the selection process, this is not thought to be important you are likely to identify a good standalone DBMS.

If it is thought to be important you are likely to identify a good DBMS which is also part of a set o data management and software products - a much better recipe for success.



of the invention above.

The Brother EP-44.

A technological masterpiece which is about the size of a telephone directory

Yet which encompasses an entire range of office electronic equipment. Electronic writer ... computer terminal ... computer

printer... calculator... even telex machine. On first inspection, the QWERTY keyboard seems disarmingly familiar (Until you discover the host of international symbols also available.)

FASTER THAN A SPEEDING BULLET

THE EP-44 ACTUALLY BENDS THE TYPEWRITTEN WORD INTO MACE
AND BACK TO BARTH VIA RATELLITE.

OR, OF COURSE, TO THE OFFICE NEXT GOOR IF YOU PREFRE.



and update up to separate characte EP 44's memory. Take a quick

WHEN YOU REALLY MUST FLY. An Oemonstrated, the EP-44 — Weidhing Lens Than Gles — can be transpirted by Hand Olider AT A HEIGHT OF UP TO 175 FEET.
THE EP-44 CAN EVEN BE TAKEN DN A TRAIN OR FLANE,

the capacity to review and update up to 4000 separate characters in the Take a quick look at

the LCD panel. Every character: pops up on this screen as

> you type. You can correct up to 15 of them before they even hit the paper

Then whatever typewritten copy you choose to feed into the memory text soroll viewing and editing facilities enable you to correct anything you wish. Whether it means raising a point or dropping a para. You'll find the EP-44 also specialises in mathematics.

homework, . From working out the latest exchange rates, to long division, thanks to its full function calculator.

And getting from "Dear Sir" to "Yours faithfully" comes automatically to the EP-44 DEPARTMENT TEROTHER OFFICE EQUIPMENT DIVISION JONES IN BROTHER, SHEPLEY STREET GUIDE BROGE AUDENSHAW MANGHESTER NAMED.

As do paper insert, carrier return, centring, right inflush and underlining.

Being a child of the computer age, the Brother EP-44 halth't be complete without an RS-232C interface. Thus connected to your home computer, the EP-44 will reel off computer command lists simultaneously

asyou type them on screen. And, you'll be reassured to know, they'll be printed on presentable A4 sheets.



Not the bus ticket type rolls that have ecome annoyingly common on inferior printers. But perhaps the most ingenious of the EP-44's myriad features is its capacity to send messages through

With the help of the humble telephone. Link it to a receiver via an acoustic coupler and it will send your typewritten message to a similarly linked Printer or Brother EP-44 anywhere in the world By way of satellite, land line or cable. An alternative telex no less

Enabling you to type in Bradford, on paper in Bangkok "E.P. phone home" indeed



HOW THE EP-44 REPLACES

THE EP-41 HIVES YOU HAVE PARTSON THE

THAIN THAT WOULD OTHERWISE HE EMPLAYED WORKING OUT PERCENTAGES THE HARD WAY, MEMORISING

PAGE FORMAT, RECTIFYING TYPING ERRORS

indispensable asset for anyone who

communicates by the written word.

As you would expect, the EP-44

exceptionally improved print definition.

squeezed into a slim 13" x 10.3" x 2.2"

EP-44 is its starting price - £249.95 (inc. VAT).

Its 24 x 18 dot matrix head provides it with an

Remarkably, every function, feature and facility is

But perhaps the most remarkable thing about the

hat make t

emory that in

text editing

face that Pu

fferent r

Inter-city or inter-office.

goes one better in the character

extra-terrestrial activities.

It will become an

reproduction stakes too.

Too good to be true?

But the EP-44 is not confined to

BRAIN CELLS.

108 1065 HOLDISTITUS 300H1 (SENES) . OS 330 306 (4 LINES) TELEX 65092 BROTHER BUDLISTRES LIMITED NAGOVA JAPAN

Micros cause major re-think

The arrival of the micro is forcing OEMs to radically change their line-ups. John Lamb reports

TIME was when an OBM or Original Equipment Manufacturer was a firm in the vehicle husiness lines. The largest group of OEMs which assembled cars or trucks from major components supplied hy mainstream auto manufactur-

By association, the term was applied to computer companies who put together systems from parts manufactured elsewhere. But it was not until the arrival of the minicomputer that the term OEM came to mean a company whose principal activity was to flesh out a ready-made processor with applications software and perhaps peri-

Now it seems the game has changed once again. The arrival of the microcomputer in a big way (there is hardly a well-known manufacturer now without some kind of desktop personal compu-ter) is forcing OEMs to think long and hard about their product line-

In the US, where they tend to be a bit ahead of the game; *Datamation* magazine is forecasting that all OEMs will be offering some kind of small machine by the end of this year. And those who don't or who are late into the field are going to find l'fe difficult:

Here, OEMs are only just beglo-ning to get into the swing of things. "They [OEMs] are very tempted by the market," says Jim Oatway, head of systems supplier marketing support at Data Gen-eral.

eral.

'Traditionally, they bave tailored their products for individual markets; but they are finding the desktop or personal computer a little bit difficult to manage. Some will get their fingers burnt hecause they find it difficult to change from their normal praatice of charging for hand holding and catering for their cus-

The signs are that personal computers are already making an impact on the traditional OBM oatway "But that doesn't mean we don't aim to maintain our compress. Digital Equipment and Peikin-Elmer have been trimming prices in a bid to keep the ininis tween 35% and 40% of our business and it is growing," says we don't aim to maintain our commercial and technical OEM market."

Oatway explains that Data General tends to operate on a geo-

The arrival of the microcomputer has also spawned a new voca-bulary in the OEM business. Out go the names OEM and systems house; In come such exotic terms as Value Added Retailer; Systems Integrator, Value Added User and

ike to have each national market nicely divided up into vertical sectors and, for more common or gareven Value Added Dealers: new supermarket images to match the "pile 'em high and sell 'em cheap" philosophy of much ple the per-sonal computer business.

are the commercial specialists adding software to a standard system and selling it in a geographical or pecialist market.

Then there are the more traditional OBMs, which incorporate their purchases into some larger system. These technical OBMs may be building typesetting equip-ment; body scanners, production lines or even telephone systems. Finally, there is a small group of equipment brokers. These are

companies that add no value to what they buy from manufacturers, but act as suppliers to techni-

Some will get their fingers burnt because they will find it difficult to change from their normal practice of hand-holding

cal ORMs or as a safety net In

times of sbort supply.

Of course, there is a fourth element in the OBM equation, the manufacturers' own sales teams. As much as 60% of a manufacturet's sales can come from his own salesforce. Ensuring that these salesmen do not tread on the toes of their OEM counterparts is an almost impossible job, and rethere one that manufacturers

armost impossible joh, and perhaps one that manufacturers are in two minds about.

After all, the reason that they sell to ORMa is that selling direct is too expensive for them, if they can get to the end-user themselves, then they will.

That is the case with Data General."Direct sales account for be-tween 35% and 40% of our

Oatway explains that Data General tends, to operate on a geographleal hasis rather than specialising in manufacturing, medicine and so on, as many of its

den applications like commercial secounting, into second be filled by a small number of OBMs who between them could guarantee a

manufacturer hlanket coverage of

"It doesn't work like that," says Oatway. "Ideally, we would like to have each of our customers in different markets. But it is very difficult for a small OEM to become experienced in one particular area. We do, however, have one or two OEMs who have carved out specific nicbes for themselves, like MGE who are strong in accountancy practices."

Establishing these vertical markets is the most important priority for OEMs, according to Oatway. "Users are aware that if they are in a specific business, they want to deal with someone who understands it. And this holls down to the need to bave non-computer ex-

One trend that has belped OBMs to home-in on specific types of customer is the tendency for eausers themselves to spin-off the fruits of their investment in data

P&O Computer Services, for instance, was set up to run a hureau service for its maritime parent. By 1979, the company was writing mini and micro software for the shipping, freight forwarding and construction businesses.

The company lists consultancy, systems sizing, installation, training and recruitment among the services it offers, on top of Digital Equipment and Data Gen-

P&O is in an ideal position to draw on specialists who have cut their teeth on the business for which they are writing and instal-

The relationship between OEMs CADOGAN . . , "Dealers need to focus more - the general purpose OEM is a dying breed." tend to upset the delicate balance machine and, at the top, the Model between the two. However, the major manufacturers have begun to offer more support to their mini. OBM customers in the shape of software tools to help in the development of applications and improved training facilities.

But this may just be a short-lived thawing in relations. It is clear that at present

lived thawing in relations. It is clear that at present, microcomputers offer little to the conventional OBM unless he is prepared to get into the retailing business, or ean guarantee the high volumes needed to make such husiness pay. Oatway is convinced that as far as Data General is concerned, there is no reason why OBMs should not branch out into smaller systems. He maintains that Data General's three-line micro range, eaters for all styles of operation. At the bottom, there is a traditional

micro with CP/M and MS/DOS for nitely growing at between 30 and nity for existing OEMs. There is

Data General is in the throes of setting up a distribution network for the micro range, which,

according to Oatway, will include commercial and technical ORMs as well as micro dealers. Bill Cadogan, marketing manager of Data General's UK operations, puta his finger on what he sees as the main growth areas in the OBM marketplace. "Oviously,

the desktop sytem is becoming more and more functional," he says. As a result, ORM vendors: particular specific markets. OEMs have to sell more systems to get the are also going to have to sell office same turnover as they used to get automation software in addition to on bigger systems. that is "At the smaller end of the mar- too."

ket a group of microcomputers. The growth in networked for example the market is dell-micros may be the best opportu- John Lamb is a freelance journalist.

"At the other end of the market,

with the higher volume 32-bit systems, demand is growing at about the same rate."
According to Cadogan, I6-bit
sales have levelled off, and although the sales figures are still high, they are not increasing at the

adogan is also specific about the kinds of areas in which OEM dealers should he operating. "Dealers need to focus more — the general purpose OEM is a dying breed. Successful OBMs these days are entering vertical markets, developing their own software for particular specific markets. OEMs the industry-specific software;

little doubt that operating and setting up such systems is beyond the abilities of most users, even if they had the inclination to speed bours familiarising themselves with the technology. The arrival of proven networking software and standard network interfaces could open up a market for OEMs that is every bit

as big as that for minicomputers. In the meantime though, OEMs face a difficult period of adapting to new styles. "My message to OEMs is to make sure they are fully aware of the market and of the effects that a broader product line will have on their product

line," says Oatway.

They should also be thinking. long and hard about the best way to bring their software down onto the smaller machines when they

The never ending tale of badge engineering art

and peripherals.
The Chorse 123 is not a cheap

These days the re-

sale of other

people's products is big business

Visicale, Silicon Office and Peach

STC's reason for getting in

tree software.

The chains of badge engineering which have emerged out of hardware OEM sales are endless, and form some strange partnerships. Della Bradshaw traces the growth of this new genus and defines some of its neighbours

BOXES of tea from Sainshury or woolly jumpers from Marks and Speccer have one thing in common: their origins may be until their origins. known but the label convinces the customers that what they are buy- dahl's Trilogy Corporation ing is "quality". When it comes to omputers, the situation is much

Those strange selling practices known as OEM sales, or badge engineering, or often as not just straightforward marketing, have een keeping the computer market alive for years. But now OEM-ing has resily come of age, with IBM's decision to sell its large 3380 discs for resale by Siemens, NCR and Digital Equipment.
Of course, IBM itself has not

been able to survive, particularly at the lower end of the computer nacket, without a bit of OEM-ing. Toget the Personal Computer on on to the market place at the right time and in the right quantities, it had to sub-contract a lot of its manufacture, even as far afield as

Japan and Taiwan. But is that good solid OEM-ing, or is it just sub-contracting, or is it marketing, or what? The definimarketing, or what? The defini-tions seem as vague as the alli-saces. A spokesman for ICL, for example, says the equipment ICL supplied under an OEM agree-ment were printers, from Ricoh and Qume, which are bought in and sold without even gluing un a oew label, while the larger Siemens laser printer is marketed as the ICL LPS14.

But ICL is one of the most prominent companies when it comes to buying in equipment — there is the Atlas 10 mainframe and the point of sale terminals which it buya from Pujitau, the Perq system which comes from what used to be called the Three Rivers Company in the US, and the DRS8801 word processor which it gets from Logica VTS, not to mention the recently ap-proved DNX2000 large digital PABX, better known as Mitel's

And hest known of all is prohably the Rair Black Box, sold by ICL as its eight-bit personal com-

Of course, they all undergo a rather swish change of plastic boxes, and come out neatly kitted n brown and cream, as well as

Even IBM itself has not been able to survive without a bit of OEM-ing

for that is "hadge engineering", even though the term engineering seems a little over the top as a description of the process

ICL, of coorse, is not adverse to selling its own kit to other maoufacturers which are badge engineers. British Telecom's Merlin division, for example, geta its kit direct from ICL, with a hit of Logica software thrown in for good

But whether you want to talk about badge engineering or value-added re-sale, the root of all these marketing plays began in the dim and distant past with hardware OEM sales. That was the sale of which launched its top-of-the-machines to other companies for them to package up into their own broduct.

The OEM superstar of them all,

which launched its top-of-the-range Chorse 321 in October last range Chorse 321 in October chips or boards or chassis for machines to other companies for

it is possible to think of Gene Amperforming the same sort of function in licensing out the use of its wafer-level fabricated chips for use in Digital and Sperry computer

These days, the re-sale of other people's products, whether with the addition of bits of software or kit or not, is big business, and covers everything from the biggest of mainframes to the smallest of micros, not to mention peripherals and add-ons as well.

They all undergo a rather swish change of plastic boxes and come out neatly kitted in brown and

At the large end of the market in particular, it is easy to see why marketing someone else's product I/O cost. For the company which actually did the development, there is access to markets without the investment in marketing

rompatible suppliers puts you in the picture. You can buy the big PCMs from any of eight suppliers — Amdahl, Hitachi, Fujitsu, BASF, Olivetti, NAS, ICL or Siemens - but you have only actually got a choice of three ranges of machines - from Amdahl, Hita-chi and Pujitsu. The others just buy them in.
In the middle of the computer

product — It starts at around £100,000 — but it can support up range, numerous mini-manufacto 32 terminals from up to four Mbytes per second of memory. turers sell their products on, either for "value-adding" with software, or as the processing centre for other machines. Digital Equipin the micro field, companies like Rair and Texas Instruments spring readily to mind as companies that happily sell their ment, one of the biggest suppliers of them all, says it is unable to disclose what percentage of its husiness goes to OEM customers, machines for resale, not to mention the Timex micro, just another version of the Spectrum. And it's not only one brand of micro per distributor either. or who those customers are. But ohvious uses are for scien-

tific and for engineering purposes

— CAD/CAM for example. Calman, the CAD/CAM arm of the STC, for example, classically known as a telecommunications company, decided it would get into the micro field about a year US General Electric conglomerate, for example, has developed most of its software on Vaxes, and sells the hardware for Digiral, along with its software.

Data General is more forthcom-ng about its OEM sales. About 50% of the UK sales of Data General hardware goes to OEM dealers, that is, dealers who sell the Data ago. STC took on Commodore, General label but with added software. Companies like MGE, one of the leading vendors of computers to the chartered accountancy profession, use a range of Data General bardware.

Liverpool-hased Fraser Wilmicro distribution is obvious. As the business manager of STC Micros said when the company was launched: "Anybody with an account with STC Components liams uses Data General hardware to complement its software for lnsurance brokers and estate agents, and also markets Digital Equip-Group has one with STC Micro ment as well. - that means we already have Perkin-Elmer also sells its l 6,000 potential purchasers on ac

mainly to scientific or top end of the market companies, which packet the equipment for panies have tended to go for termi-nals instead of micros, as a means of selling communications and ons. One such supermini applications. One such company is ABS Computers, which launched its top-of-the-range Chorse 321 in October last

automation network based on the IDX digital voice and data PABX.

AT&T in the US has also made the decision to go in with Convergent for its office automation pro-

As well as the hasic machines, peripherals are generally supplied on an OEM basis, especially printers, which require completely different development techniques from those usually employed by the computer manufacturer. Centronics, Qume and Ricoh are all big names in the OEM supplies business. So is Brother, which supplies Olivetti and Sord, and Newbury Data, which supplies companies like Decision Data.

Communications equipment can also be sold on an OEM basis.

Hasler, for example, sells its telex box add-on to micro dealers for them to incorporate in their machines, as does Data and Control Equipment with its re-cently-approved Telexbox 2. One of the most difficult thiogs

OEM vendors are averaging 30% growth every year to sort out with OEM suppliers is

just exactly who supplies what to whom. The problem is highlighted by Digital Equipment, which is not even prepared to say who it equipment goes to.

When the printer firm Centron-

campaign under the slogau "What's in a Name?", a couple of years ago, showing a bunch of re-wrapped Centronics printers, it met with considerable resistance from several of the OEMs; so

much resistance, in fact, that the ad campaign had to be shelved.

Whatever happens in the OEM markets, printers look like remaining one of the major types of kit to he shipped around. On the computer side, thiogs appear to be grow-ing and shrinking, depending of which particular bit of kit is being sold, and what it is being sold with. As an overall rule of thumb however, OEM vendors are averaging 30% growth per year. Della Bradshow is canynunication

CUT OUT THE GLARE ON VDU SCREENS Parecubes provide subdued ambient illumination

ics decided to run an advertising

Hewlett-Packard, Rair and Digital Equipment hardware, which it sells with standard packages like Cathode Ray Tube (CRT) VDUs require a high standerd of lighting control lor the comiort and efficiency of the user.

> Screen reliections and glere interiere with the clarity of the display. But the interlux Paracube range of lighting panels can solve the problems simply end economically.

levels lot comfortable viewing, with meximum contrast ratios to assist visuel sharpnese.



High levels of horizontal Illumination competible with office standards sultable for reeding input data, notation of retrieved maletiels and seig

CUT OUT THE COUPON NOW

By Interlite Linear Crimnols Limited Interine House, Packet Boot Lane, Cowley Peacher No Usbridge, Midds UBH 21R.

How to survive in the OEM jungle

Frank Booty looks at the intricacies of selling kit in this day and age

But that was once upon a time.

As the computer industry has matured, so the jargon words and channels of selling the products have become more complex.

Over the past half decade, the terms systems house, systems inte-

grator, consultant and hardware OEM have sil become established. Recently in the US it became clear that rapid changes in compu-ter and related technologies had created lower-cost products and systems which opened up vast new

end-user markem To meet the beavy demands from these new markets manufacturers began to put into place distribution networks which use a variety of Independent Sales Orga-

There are many different kinds f ISO, including distributors, dealers, systems integrators, com-puter remilers, commercisi OEMs, office machine/products dealers, agents and representatives.

The rising importance of distrioutors resulted in the first Dealers' Exhibition in 1979 — an event which subsequently went on to spawn a series of shows for ISOs, including Comdex/Europe and (in March 1985) Comdex/Japan. Last year's Comdex/Fall in Las

Vegas in November boasted over 1,400 exhibitors in five separate exhibition halls consuming 1,200,000 square feet of exhibit space — a far cry from the 156 exhibitors at the MGM Grand Hotel in Vegas in 1070 Hotel in Vegas in 1979.

This means that new avenues for ling computer products have been created. Increasing costs of marketing computer and word processing products within Europe lave led to searches, for new, lower-cost methods of distribu-

Europe is subtly different. Aside: In addition, the conferences are from the two-year, US lead in the held in major hotels, selected for their location close to major OEM

example, transfer priging oan make collective buying in the US Added Users.

an attractive proposition, but the trade-off may be a loss of manufacturer support. Hence the advantages and disadvantages of collective buying in a country.

Reading which sells minicomputer peripherols to end-users and OEMs in Britain; Unicomp of Mian which includes a chain of computer retailing shops trading under the name of Computeria; and Kon-tron Elektronik of Munich, which markets computer peripherals manufactured in the US and Japan to OEMs, systems house and end-

day mixes of seminar programme/ OEM exhibition hosted at major European sites like Frankfurt, These regional displays of operat-

need to move: carefully cross national boundary lines

ing equipment, combined with technical seminars, help psrtici-pants to reach key decision-makers where they live and work. Simultaneously the ICCs support regional sales personnel with an

ONCE: you bought a computer front either the manufacturer or on Original Equipment Monufacturer (OEM) for resale to someone else.

Rut that we are the solutions of the solution which sale miniscomputer. users in Germany. Nordic Software and Kontorsu-

veckel of Stockholm both specialise in the distribution of personal computers while Geveke Elecronics of Amsterdam is distributor of computer products, data communications and industrial

There are also the US shows which have been duplicated over here, notably the Comdex/Europe event and the Invitational Computer Conferences (ICCs), which sre constituted from s series of one-Stockholm, Paris and London,

European ISOs particularly if they

economical use of time, money and

ten unacknowledged problems of marketing areas and have an "invigeting across Europe'a cultural tation only" format — to exclude

getting across Europe'a cultural and lant time tartion only format to exclude the difficulties thrown up by fraging-intentation and duplications. The US is in the grip of a second marketing phase, the Value Added of Market, VAM. Basically, this is products, particularly if they cross national boundary linea. For example, transfer pricing oan example, transfer pricing oan

collective buying in a country other than the ISO's own have to be considered carefully.

Illowever, the US marketing lay the has made its impact on uropean territory. Most people and interfaces, dara acquisition, and marketing of computer and media.

In the concept of the ander Sales Organisation.

The has been changing; to reflect the state of the include.

It is a particular to the concept of the ander Sales Organisation.

The has been changing; to chips, and sells direct and through distributors on the putters; add in memory and the putters; add in memory and the concept of the sales of TSO's include.

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manufacturers of computer systems and hardware OEMs. Value Added Re-sellers are defined as systems houses, systems integrators, communications systems integrators and consul-

The Value Added Users are to be found working in engineering, scientific, manufacturing and gov-ernment institution and financial application areas. Value Added OBMs are systems

integrators and mini/microcom-puter manufacturers which add value by incorporating CPUs, peri-pherals, data communications equipment, software and other re-lated products into their systems. Typical of such ORMs is Televileo Systems which manufactures terminala and multi-use all business systema, and sells ough a network of independent

Apollo Computer manufactures 32-bit "supermicro" computers that can be networked for distri-

Hewlett-Packard manufacturer

16-bit minicomputers, desk-top computers, alphanumeric and stands CKT terminals, primers, ploiters, hard copy units and minicomputer or desk-top Compu-ter-Automated Test Systems based

Value Added Re-sellers are third party system Integrators which buy from OEMs and add value by ters, solid character printers, serial incorporating mini/microcomputperlpherals, software and other related products into com-plete computer-bssed systems they sell,

Typical third party OBMs are Microsoft, which produces operating system software for microcomputer systems (plus boards that provide Basic or Fortran compilers for Apple micros) and Johnson Controls of Leatherhead, which manufactures and installs automatically and produced the controls of the control of the controls of the control manufactures and installs automated building environmental control

Value Added Users are highly sophisticated users (including in-house systems integrators) which add value by incorporating mini/microcomputer products into their own unique computer-based systems for applications in engineering, science, manufacturing, government, iostitutional and

that can be networked for distributed multiprocessing, selling direct and through systems houses.

Altos Computer Systems, selling direct, through systems houses and dealers (Unian Technology; Tripont Aasociated Systems), manufactures is computer graphics. Originally a technology so complex, and advancing so rapidly, it took engineers to sell the computer graphics. Computer graphics marketeers now recognise the computer graphics. Computer graphics marketeers now recognise the need to capitalise on this expanding market,

> The market is more mature, more . sophisticated, much thicker in jargon and more fiercely. competitive

Computer graphies, after all, affect the sales of graphic terminals, systems, monitors, controllers and software needed to meet the requirements of applications the requirements of applications mechanisms of applications of app

sents a diminishing propordon of printers, floppy disc drives, Win-chester disc drives, tape cassettes/ing at 13% a yesr. cartridges, modems, CRT

terminals, floppy disc media, printer ribbons and tape drives. There is also the new OEM market of personal computers used in added systems. In an incredibly short time, the personal computer has created a market as yast and diverse as the industry

Advanced technologies, marketing strategies and new distribu-tion channels are both the cause and result of the personal compu-

The personal computer ORM market has developed to serve the needs of the user requiring a more sophisticated system, and IBM has instituted a value added pro-gramme for the IBM-PC.

Those wishing to buy a personal computer need to go to one of IBM's authorised dealers in the UK and Bire. At the last count there were 144 - 29 of them based In London. Specialist Computer Centres of Birmingham and Liver-pool, for example, are authorised de let. for IBM-PC products and provide a full range of personal computer add-ona. Techland Bucks, supplies terminal emulation products for the personal computer so that the machine can be used with System 34, System 36 or System 38 machines for full-featured 5251 Model 12 emulation for remote or local exercise. ystems. Int of Bourne End.

featured 5251 Model 12 emulation for remote or local operation.

Add-on printed circuit boards to enhance the personal computer are marketed by such organisations as Qubic Distributing of London, Interquadram of Slough and CPS (Data Systems) of Birmingham.

Applet also has a continuing

Data Systems) of Birmingham.
Apple: also has a continuing
ORM support programme, and in
particular the company has
demonstrated the distribution
roads that personal computers
have made into the industrial
scientific ORM market.
In summary, to quote from International Data Corp., although
the technical ORM market repre-

all minicomputer sales, the

mies have not helped this growth rate, although supplier revenues are expected to grow at a slightly The US is in the

- C - E - E - E

grip of a second marketing phase the Value Added Market

slower rate due to more value being added by the OEMs them-selves in terms of bardware, software and services. The increase of added value has

been encouraged by the slowing of overall technical sector growth which has led to more purchasing of bare board components, includof bare board compone Value is added in different ways by technical OBMs depending on application focus. Hardware

process control and charge man agement applications to specialised workstations for Computer Aided Design (CAD).

The need for special hardware reduces the possibility of a major supplier attacking an applicado area itself rather than through an ORM, which helps to assure the ORM's long-term visbility. But it

Where pressures for cost reduction are strong and CPU require-ments may be satisfied by the use

does not lessen the threat of the ORM, vertically integrating inte

the CFU is likely to result.

So you can still go out and buy a more mature, more sophisticated, much thicker in jargop and more fiercely compelitive and cost:

cooscious.

Frank Booty is editor of Systems · International.

The show for those who sell

The Trade Show is a must, says Andrew Thomas

Lynx home computers.

mentation of Unix.

Dsta Efficiency has a new range

of 12-inch monochrome moniturs

ranging from the one to four user 750 to the 50 user 5500 will be on

column, 150 cps printer aimed of the IBM-PC user. Features in-

clude 50cps correspondence quality and a 36×16 matrix.

Husky Computers, noted for its rugged micros which have found

favour with the military, is looking for value-added dealers to distri-

Kode Ltd234 Mellordata Ltd232, 233

Rabbit Computer (HK) Ltd.

Rack Data Ltd247, 248
Real Time Printers Ltd 273
Rediffusion Computers Ltd

Sapway Electronics 134 SGS ATES (UK) Ltd ... 287

Southdata Ltd130

241

Stack Computer Services

STC Business Systems 261, 262

Tamsys Ltd 270
Tating (UK) Ltd ..244, 245
Townsend-Coates Ltd ..254

Universal Micro Peripber

WBM Business Supplies

Zilog UK Ltd

Roland DG.

141, 142, 152, 153 Transtee Computers 242, 243

Show opens its doors at the Wembley Conference Centre next Tuescomputer show. It's the one UK exhibition aimed squarely at the people involved in the marketing of computers.

More than 50 companies will be

st Wembley, showing micros, minis, word processing, software, components, peripherals and supplies. The Computer Trade Show doesn't aim to attract mem-bers of the public, but concentrates instead on the quality of its visitors - people who want to see and discuss products which they night take on and sell.

from Ksga/Taxan along with two new near letter-quality printers from the same stable, while on the General Automstien stand, the Zebra family of Pick-based micros, of a registration form, and the show runs from Tuesday 13 to Thursday 15 March. Opening hours are 08.30-17.00 on all three One of the more familiar names at the show is that of Honeywell, in the guise of Honeywell Informa-tion Systems Italia, which is show-ing the first model of a 132days. Nearest stations are Wem-bley Park and Wembley Hill, algb this is one show which you can drive to with confidence -

there's car parking for 5,000.

Amongst the exhibitors we find Amongst the exhibitors we find ACS, sharing a stand with Roland DG for the first time, showing a low cost (£132) graphics design package called Four Point Graphics, and ESS 2D, a CAD package featuring many of the facilities of mainframe systems but at low cost.

mainframe systems but at low cost.
The package runs under PC-DOS or MS/DOS and can drive plotters of up to AO in size. An A3 lotter, the DXY-800, and the Roand range of colour and monoch-rome monitors will also be on

display.

Baydel is showing four new DEC-compatible systems and a streaming tape controller. The S114 and 15 use DEC's latest portability.

Mellordata, one of the four authorised Televideo dealers in the new personal terminal, along Micro-I processor chip and feature 2 minimum of 12Mbyte of products from Datamedia and Touch Technology, for which it is the sole UK distributor. mainstore and eight serial ports. The SJ14 has 40Mbytes of Win-Two new micros from Hong Kong-based Rabbit Computer, the Wrap-Bit 11 and 111, are on show, chester and 45Mbytes of tape storsge for back-up. Operating systems supported include RT11, RSX-11M, TSX plus and Unix.
Computers is faunching its new Lynx Laureate small business boasting low profile keyboards and IBM-PC, PC r and Apple II com-patibility. Rabbit promises a brand

List of exhibitors

Access Computer.....

Asian Sources Computer

Compubits Ltd134

Data Efficiency Ltd 227

Granada Computer Books

Havat Lid. 237.
Hugin Micronic 127, 128
Hugin Micronic 127, 128
Hughy Computers 225
Icarus Computer Systems
Lid 274, 275
IBM Lid 277

Systems Italia

Honeywell Information

......291, 292

system, a CP/M compatible new piece of hardware for launch machine in the under £1,000 price bracket. This new UK machine is portsble market. developed from the 48K and 96K

Unix III appears once again on the SGS-Ates stand. The Samson is a desk top micro-mainframe bridge with demand-paged virtual memory, dual bus design and in-Alongside the Tatung VT4200 terminal, which emulates no fewer than 11 popular VDUs, Data Design Techniques is exhibiting its new Stacpac multibus system, bigh performance 68000-based lers. A wide range of applications packages and high level languages system featuring colour graphics and the Uniplex System III impleare supported.

STC Business Systems is showing the lTT-developed Xtra, featuring IBM compatibility. STC claims that virtually all the software and peripherals available for the PC and PCXT can be supplied to the PCXT. ported, but that the machine car



The Show is at the Wembley Conference Centre, March 13-15.

See us at The Scottish Computer Show, 13-15th March, Stand No. A6, Kelvin Hall, Glasgow



Newbury Data's new 5 4 Winchester has two 'half-high' discs; one fixed, one removable Which effectively means it can slash the

access time you get with floppy based systems, whatsoever And also makes it a lot cheaper and more

reliable than Winchesters with tape cartridges, The Newbury Data 505 Disc Drive provides mass storage data portability and backup in one lar superior device.

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The 505 has a unique retractable head that never touches the disc. And there's also a

self-sealing air system uiat breveing contamination

in fact, there is no preventative maintenance

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Dave Madden explains the success of Convergent Technologies

THERE were raised cycbrows last month when American Telephone and Telegraph signed o \$200 millium deal with a five-year-old Californian company. But there need not have been: the company was Convergent Technologies, which even in Silicon Valley, is viewed as

by its flamboyont founder-presi-dent Allen Michels, has pulled in business that adds up to some \$2 billion from a customer list that reads like the NCC entalugue.

Convergent is fast becoming the industry a favoured mistress. Everyone is going to it for what they could probably get at houte, and the fundamental question is

ters, asks in some bewilderment, Why do the likes of Burroughs and NCR queue up for Convergent kit - which is based on fairly stan-

company is not merely imitating what DEC did in the minicomputer OBM market 10 years ago. The scnior computer companies, with their pride and their resources, never felt the need to go to DEC In the last year, Convergent, led for strategic new products, but that is exactly what is happening to

> According to Bob Groves, national sales, it has been the ina-bility of the traditional computer manufacturers to react to changes in the marketplace that has given Convergent its chance,

"Many of our customers had their own office systems products The compsny manufactures a range of workstatious and it acils exclusively to OEMs. But as David Johns, managing director of British micro-maker CPU Compusion of the compusion o to fill the gap," says Groves.
"They knew that they could get our product to their customers."

David O'Brlen, Burroughs' dard components - when they director of sales and marketing in

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leldwork fifty is no lightweight when it comes to

al external devices and standard systems When the job damands a lot of

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GROVES . . . "Our customers know that they can get our product to their customers."

worst crime that we could commit.

sside from shipping products of poor quality, is to embarrass good

people at good companies."

A hitch in production, whether

of its own making or not, could

compromise the company with big customers. And where Convergent

is particularly exposed is over the availability of components. Both its N-Gen and Megaframe have intel iAPX 80186 inside it, and

convergent says that it has stock of 70,000. The company is Intel's biggest customer after IBM and, says Martin Lippmann, UK sales manager, the relationship between the two is "close".

But there are signs that Conver-

gent is nervous. Last month, in Phoenix, Arizona, the company showed its latest offering – the Miniframe. Its 24 salesmen and

nvergent says that it has stock

the UK, says: "It is really very slingle. If you look at the spread of plines. Michels has said that "the simple. If you look at the spread of products from any one organisation, it's far too wide for any company to fund and develop. We address particular market sectors, and in the final analysis, when we and in the final analysis, what we are providing is a service rather than the product.

"Once you have made that deci-sion to look at other sources, the beauty is that you can go for the best in the market.

Groves contests that whilst Convergent is in nominal competi-tion with Burroughs, it does not necessarily compete directly with Convergeot kit.

Burroughs aims our workstations at its own customer basc, NCR took the AWS specifically for word processing, Gould uses Convergent kit as the front end to very large systems," he says, though he admits that there will be an overlap amongst its growing number of telecommunications

This exclusive reliance on ORM

sciected prospects were told that the product was available for im-The significance of this is that the machine is a single CPU version of the Megaframe, using the same virtual memory Motorola 68010, but without the

troublesome Intel processors.
Convergent said at the turn of the year that it would ship N-Gens with an 8086 in place of the 80186 os a stopgap. But US reports suggest that most of its customers prefer to welf for the customers prefer to wait for the system proper and that Burroughs is putting pack the launch of its N-Gen product rom this quarter to next.

from this quarter to next.

Another consequence of the way Convergent does business is that the demand for new products is vorscious. This has long been a fact of life for Convergent. As a start-up company it was fast off the blocks with three very lucrative and prestigous deals: Burroughs, NCR and Thomson CSP.

But to win that business, Michels had to gamble. Not only did we trade part of his company—each of those deals gave the OEMs warrants to buy Convergent stock

warrants to buy Convergent stock at fixed prices - but also options manufacture Its kit once they ad exceeded a pre-set minimum

Burroughs was set to activate its ent and get its B20 made in Japan by Koktusai Hiectric, when Convergent flashed its new N-Gen product, and Burroughs forgot about its plans.

This has compelled Convergent to develon at a rate that its

to develop at a rate that its compe-titors — Airos, Fortune, or Puture

titors — Airos, Fortune, or Future Technology Systems, for example — can barely envisage
Yet at the same time, Convergent's first generation machines are still viable. Indeed, Groves says that the AWS is still going out at 350 per day, and looks good for another 12 months.
Of course, this is, a dangerous game to play, N-Gen and Megaframe were the worst kept secrets in the industry, and sales of AWS and IWS suffered accordingly. We shot ourselves in the foot with N-Gen, says Groves:
This compulsion to produce new produces coloins the company. It is reflected in a somewhaf unusual corporate affucture, Mi.

The product line

CONVERGENT'S range now comprises two distinct generations. Its first product was the Integrated Workstation (IWS), built around Intel's 8086 processor, with another to handle graphica. In 1981, it produced a lower-and Applications Workstation (AWS) using an 8088 chip. 1982 saw the AWS Turbo colour graphic workstation. graphic workstation. Thase micros were similar to Burroughs B20 and NCR's

Tha new geoeration, which should cootribute 90% of tha company's earnings this year, includes N-Gen, an 80186-beed workstation. The attraction for prospective OEMs is its adaptability end modular, building-block con-struction, with componenta daisy-chaining on to the CPU.

chels sits above divisions which

represent lines of business.

For example, Distributed Systems handles all the workstations — IWS, AWS, N-Gen-; Portable Computing handles just Workstate; and Data Systems looks after Megaframe and Minif-

Bach division has its own manufacturing, engineering, marketing, and financial functions, If a new business area emerges, the com-pany adds a discrete division. So

calculator, answering machine
— with hulli-in modem — but
not strictly speaking a computer. It is driven by a Hitachi
6303 chip and is not program-

Both Ada and Pick are in the

Systems is in for \$30 million worth of N-Gens, which it in-

tenda to incorporate into its IDX private digital exchange

Other UK customers in

UK. Its US aubsidiary A. B. Dick has already signed a \$60

million contract, and Conver-gent hopes that GEC will do a

Convergent became a pub-lic company when its shares

began trading over the counter in May 1982 in New York.

Its career has been, to say the

separate deal here.

Convergent is the definitive OBM supplier, Michels says that concentrating on OBM business

- 电装置器 #

The client list ing its arrangement with Bull, which was a renegotiation of the Thomson coetact, is with Piessey. Plessay Office

CONVERGENT Technologies boasts over 100 OEM customers, In the US, that client list include: Automatic Data Processing (ADP), At-isniic Richfiald, Burroughs. iantic Richfiaid, Burroughs, C-3, Datapoint, Gould-SEL, NCR, Prime, Rolm, Ray-theon, Storage Technology

But the two deals, signed in 1983, which threaten to prove ics. Groves expects GEC to most significant for Convermanket Convergeot kir in the

Bob Groves says that the AT&T development would produce "unique" products, but that not even Convergent's other divisions really know what the Fourth Division is up to though he reports that "AT&T loves the way we have decomposed

ports that "AT&T loves the way we have decomposed Unix for the Office".

Office Unix is central to Motorola's interest; too. Its information systems division, fall in net-income of 20% in fall in net-income of 20% in the third quarter of 1983 from eyear \$250 million deal for the Megaframa and N-Gen.

Convergent's largest confirmed deal in Burope, excluding in the current fiscal.

Convergent Technologies Inc 1980 1981 3.365 777 351 13.1 96.5 163.5

With Magaframe, Convergent moved firmly up-market and diversified to Motorola's 68000 family, though it chose the newest varsion - the vir-tual memory 68010. The world and its brother has a 68000. based system, so Converges has combined the new CPU and obligatory Unix - with its own propriatary CTOS

Miniframe la a single CPU varsion of Megaframe. It is object code — compatible with the Magaframe, but is

Workslate is pracisely that a personal telaphona direc-tory, dedicated spread sheet, It is due to eppear as the Bur-

> the newly-formed Fourth Division is responsible for special products - that is AT&T.

pipeline, while Convergent has started a third party programme, compiling a catalogue of software that will ruo on Convergent kit.

Overseas clients

Associate/parents

have to be treated with considerless, these breakdowns are useful One way to snalyse the market is to look at turnkey projects, for which billings are published for the major computer services.

During the first half of 1983 billings for turnkey projects the size of the sector was between amounted to over £86 million and £180 to £200 million represented nearly 20% of total

This proportion has been rising

rapidly in the past two years.

One can make some adjustments any such corrections for the rise in the sample has to be treated with considerable care. If an adjustment is made to the previous figures covering the first half of 1982, billings for turnkey projects in that period amounted to between £45 and £50 million and, quite clearly, this growth bas been quite remarkable, even allowing for some of the changes which have occurred in the apparatus

in the sampling procedure.

The growth in micro sales ha been very sharp and out of total turnkey billings they now account for about 20% This proportion is likely to rise as service compar concentrate on the micro side even more vigorously than before.

The private sector has been the forefront of the growth it terms of turnkey billings and ro presented nearly 75% of the total. basis turnkey turnover to industry and commerce Itaa more than doubled in value compared to the corresponding period in 1982.

Within the various sub-group It is quite clear that the added value aspect has played a leading part in promoting turnkey projects. In particular, aoftware im plementation (including the invoicing for systems analysis well as software products (which licence of software items) have beea of great importance, particu

2nd Quarter lat Quarter 1983 1983

Software implementation 6.1 Software products Hardwara supply (value of less 4.8 Hardware supply (value of 7.9 £15,000-£50,000) Hardware supply (value of more than £50,000) 14.8 43.2 Table 2 - Breakdown of turnkey billings by type of product. 2nd Quarter 1982 £m 2.5 14.9 1.6 0.8 2nd Quarter 1st Quarter 1983 1983 Public sector Private sector

Table 3 - Breakdown of number settings by type of clients

OEMs make sales that the others miss

The OEM market is on the up and up. John Aczel dissects the statistics

THE market for OEM products is booming and overall sales are rising markedly in this sector. In cerisources, however, it is According to various industrial sources, however, it is believed that the size of the market for alue, and is being helped by the OEM sales - that is, including both the software and hardware components — is running at around £200 million per year. In the past 12 months the growth in demand for OEM products has

Unfortunately, there is no precise definition for OEM, particularly for statistical purposes. Nevertheless, it can be defined as a method of distribution by n third party, which involves added value in the form of specialised software or by extending the computer

system in some way.
According to Stuart Haughton,
UK manager for OEMs for Digital Equipment, this method of selling is a very useful one for many computer firms, as it ansures rapid sales of certain types of hardware. isughton says that OEM reaches the parts that other forms of selliag caonot reach" (to paraphrase o well-known advertising slo-

gan for beer). In the case of DEC, OEM is of particular significance, as it is beieved to represent at least 40% pf total sales of the group. A growing proportion is sold to the technical sector, and is used in defence systems and electronic products of various kinds, such as radar. The commercial aide is also of great importance for DEC, especially for marketing small busiaess systems,

particularly minis and micros. In the US, OEM has been expanding rapidly over the past few years and most of the big manufac-turers of computers, including IBM, DEC and Honeywell, arc giving greater importance to OEM sales in promoting their products.

A number of factors help to explain the growth in demand for OBM products, but one of the main ones has been the introduction of cheaper hardware equipment, particularly

This has opened up the market for computer systems among smalfor usera and, in many cases, computer manufacturers have found it more preferable to market their micros through third parties, rather than getting themselves involved in selling directly to a wide range of firms and organisations, which normally have very specific requirements for

In addition, the market for mini and microcomputers has become much more specialised and is now operating on a vertical basis in

Statistical information about In addition, the hardware ele-ORM sales is difficult to obtain ment has also grown appreciably and the official sources do not during the past 12 months. break them dowo in any meaning-ful way. Moreover, there are a number of problems in defining summarised in Tables 4, 5 and 6,

but, unfortunately, straight contparisons with the corresponding period in 1982 are not possible due to the significant changes which have occurred in the sample dur-

ing that period.

Some of the figures are also relatively small, and contain a significant margin of error, so that they been quite staggering and at pre-

ducts, but if one relies on the official statistics for turnkey billings, it is estimated that in 1983,

Hardware supplies have been also of grest significance, particutheir value is believed to have also grown markedly, especially for business systems under £15,000. For 1984, it is likely that the

boom in OEM soles will continue unshated, though any projections for demand are likely to be off-target due to the sharply chonging nsture of OEM products

On a conscrvative basis. however, overall demand is likely to risc to over £250 million, snd this market will provide opportunities for considerable expansion, not only for software and service companies but also for the leading computer manufacturers operating in the mini and micro field.

	Billings for turnkey projects	Total billings for computer service
982	£nı	£mı
st Quarter	17.3	169 .0
nd Quarter	14.8	164.2
rd Quarter	20.5	175.1
th Quarter	23.1	186.3
si Quarter*	43.2	237.2
nd Quarter*	43.2	231.0
Figures boosted b	y bigger sample	

Table I - I	cena in cuings for iura	REY projects.	
1983		2nd Quarter £nı	1st Quarter £m
Software in Software pr	plementation	1.3	1.7 N.A.
Handware (less than £15,000)	0.3	0.7

Hardware (£15,000-£50,000) Hardware (more than £50,000)

Hardware (less than £15,000)

ole 4 – Turnkey billings for pholi		
3		Ĺm
tware implementation tware products	6.9 3.9	5.7 3.7
rdware (less than £15,000) rdware (15,000-£50,000)	10.3 5.2	3.4 5.4
rdware (more than £50,000)	6.1)	11.2

983	2nd Quarter £nı	lat Quarter
oftware implementation	0.6	1.1
oftware products	0.5	_
lardware (less thon £15,000)	_	0.1
lardware (£15,000-£50,000)	0.6	N.A.
lardware (more than £50,000)	1.7	1.5

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basaci products. The family con converse with each other

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all the competition. • Zebra 3500 - o natural Number Two, compatible with nil the lancity.

· Zabra 2500 and 1500 - full of ambition, thasa youngstors could break away and form their own group, but always keap to touch.

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echnology goes to the polls

discussing the nuclear freeze.

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Campaigns are short-term orga-

nisations with budgets limited by

law. They rely on a workforce of

temporary volunteers and are ill-

equipped to take on large-scsle

operations, such as compiling

voter lists or conducting long-term, direct mail fund-raising drives. These tasks, and opinion

research, are usually farmed out to

northern Virginia is a consultancy

that administers Mondale's direct

sing ourselves," says Nathan. "We

record, plus the price of paper and

NEW Hampshire's half million Hampshire voters enjoy meeting cleviors are spoiled. The state's candidates and judging them as "first in the nation" primary magisproportionate media coverage.

Although the scale and riming of the New Hampshire campaign set it apart from the approach taken in the rest of the US, television images of candidates chatting with clusters of door New Hampshire voters have come to symbolise the American piditical process.
Walter Mondale's New Hamp-

shire campaign headquarters in downtown Manchester bear all the hallmarks of time-honoured election techniques. Three penple are talking on the telephone to local voters, trying to identify Mondale supporters and persuade the uncommitted. Anuther group writes letters by hand to electors visited the day before by door-tu-door Mondale canvassers. An informal subcommittee discusses tactics in one comer and a student volunteer wrestles with the malfunctioning

Most of the office floor is occupied by two volunteers who are putting three by five inch slips of computer-printed paper into alphabetical order. The task may not be glamorous, but the voter ation forms in their hands are the key element in a well orga-Local compaigners tood to play what we do with them.

down the role of technology in elections - they know that New Democrats in this state, you have

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individuals. Activists also worry urlies their influence on the about public perceptions of the selection of US presidents. As cur-taio raiser for the election-year and dread the Big Brother label drama, New Hampshire attracts that is often attached to their

natur of Mondale field operations



"Political people are intimidated by computers'

in New Hampshire, is prepared to explain the principles of elec-tioneering in the information age.
"The secret to winning elections

is to know who the vnters are, and what they care about," says Ta-pella. "The cards are the heart of our campaign; they are nur information sink. When we visit, nised and technically sophisticated talk to, or mail voters, it all goes down on the card, so we can track

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to go after every individual vote."
Amhitious American politicians no longer build coalition powerbases - they huild databases.

paign by Creative Computer Services (CCS), a Dallas-based bureau specialising in computer mar-keting. Don Ewing of CCS explains that the company uses an BM-compatible IPL processor equivalent to a Group 2 43/41.

New Hampshire voter registraion records were merged with local telephone directories held on magnetic tape, and addresses and uther information from a database that contains details from the driving licences of 80 million Americans. The slips identify voters by household and are used by volunteers operating telephone

mail fund-raising. Targeted's Jim Nathan says that by the end of February the campaign had sent out four million letters at a cost of During the New Hampshire campaign Mondale's forces used 40 telephone lines full-time to contact voters in their homes.

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As if that wasn't enough, an easy to use quary language for ad hoo interrugations is essential as is the ability to taling the package to precise requirements, supporting that software and provide user training. Naturally, we expect your product to be well proven and detailed demonstrations in an operational environment will be sought.

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pick our computer services depending on who can give us the best deal. Some vendors provide Mondale callers used the slips to record voters' candidate preferlists, another couple may merge and purge them. Still others will ences, iasue concerns and other relevant information, such as supporters who needed help getlabels or laser-printed letter. Up to 15 vendora can be involved in a single mailing. By February 28, some New

Glenn Cowan, national director of field operations for the Mondale Hampshire voters had been contacted five times. campaign, orchestrated its compu-Carbon copies of the alips went ter functions. He worked in a similar capacity for the Carter-Management Information Mondale campaign in 1980, when he also hired CCS in Dallas. Systems, which used them to

prepare mailings to different voter graupa. An undecided Democratic He explains that the Mondale campaign is less technological than voter, worried about arma control. the previous campaign, but that grated with field work.

"We are talking about very simple data," says Cowan, "Our ding concern is to make sure nation that comes in to us from the field gets back to the people who will use it."

Hauging In a frame above Co-wan's deak is his operational enemy of excellence." He explains his rough and ready approach; "I want to reach one million people with 98% accuracy far more than I vant to reach 10,000 people with

Political customers also place heavier demands on their DP suppliers. "You have much faster turnaround times," says Ewing of CCS. "You're working in bours

Joel Bradsbaw is a consultant to rprise winner of the New Hampshire primary Colorado Senator Gary Hart's presidential cam-

paign.

He tells a story about the Hart campaign's main vendor, Voter Contact Services (VCS), of Haiwaii: "On Friday evening a few weeks ago our people in New Hampshire called to say that they

half to run.

"Everything worked perfectly and a Hart volunteer picked up the cards at Logan airport in Boston at 4pm on Saturday. That kind of stuff impresses people.

"Political people are intimidated by computers—that's wby they need someone like me, I can talk to the technical people and can tell when they go into their sales pitch."

dividually-tailored voter lists.

nowledged to have a lead over the Democrats in computer-assisted electionecring. Since 1975 the Republican National Committee RNC) has used an in-house DEC 2060 to compile a national data-base and to conduct voter analysis on behalf of Republican candi-

Tom Hofeller, director of the RNC's computer services department, is an expert in demographics. He gained his computer experience advising the Republican party on voting district reappointments in the early '70s.

As head of computer services'

since the beginning, Hofeller knows well the pressures on politiyou are about to be redirected," he explains. "A political organisation like the RNC cannot set its own agenda, it has to be reactive and able to change.
"In a political year a prudent

manager would go in with between 30 and 40% of his time committed to ongoing programs, and hold 60% of operating capacity on standby for spur of the moment of Hofeller's work con-

sists of boiling down large amounts of data to manageable sizes for small local races. Some of the RNC's most effective tools are maps which graphically show Republican voting levels county by county. Hofeller comments wryly: 'People's appetite for information far outweighs their ability to digest

The most important contribu-

selecting the most fertile areas for campaigns to allocate their tesources. Computerised "target-ing" is a precise science, based on

very simple principles.

Hofeller explains: "The whole idea of politics, besides winning, u figuring out how to win. In theory you're more apt to win if you put your resources to best effect. All computing is for that purpose,"

The best indication of future voting behaviour is what happened in the past. The RNC has election returns from races at all levels of US politica on file. The US Census Bureau makes

developed to rank voting precincts according to their "swing" poten-tial. Modern campaigners do oot

just seek to identify the party faith-

ful, they bome in on clusters of

uncommitted voters who are likely

to respond to finely calibrated ap-

peals from the candidate, John Stokdyk is a freehince journal-

available a huge amount of its demographic and social dsta. Names moved, but the files sre broken units that allow a high level of sta tistical accuracy. The targeters cross-check voic evels with social characteristics

computer can do anything useful has always been beside such as age, sex, income and race, the point. Simply and try to determine what demographic factors best predict voting fiddling with the patterns. By incorporating opinion thing is an obsession research findings into their calcuin itself" lations, they can pin-point avourable voters even more secuword processing package when it is

- 生養養養 10

quicker and cheaper to use maoual typewriter?" Platt's answer to this is: "Because It's more important to look efficient than to be efficient."

Plstt and Langford (Platt is the author, an Americanised Eng-lishman, and Langford states his task ss that of translator, removing vile barbarisms like "gotten "fsucet" and "Reagan") approach the computer with healthy cynicism, common sense, and hu-

Although aimed at the comput-

professionals who might consider such a book beneath them. It opens by debunking Charles Bahbage as a typical computer freak who spent 35 years labouring over his analytical engine when he cal problems had he designed the machine to perform in a fraction of the time, at a fraction of the cost, by using pencil and paper.

Platt's First Law of Computers: Whether a computer can do anything useful has always been be-side the point. Simply fiddling with the thing is an obsession in

cinating reading for DP

Slaughter of

computing's

sacred cows

about Home Computers.
Charles Platt with David Longford. Published by Victor Gol-

THANK God for sceptics. If I had

a pound for every book in which the author allows himself to be

carried away on a rose-tinted tide

of enthusiasm for the wonderful

world of computers, I should now

Micromania asks all the ques-

tions that computer people choose to ignore, such as "Why bother

with this impossibly cumbersome

Platt's First Law of

Computers:

"Whether a

lancz, £7.95.

e quite wealthy.

There are a further 14 laws dotted throughout the book, each of them a gem. Law 12 is: "The problem with word processors is

that you spend half your time thinking about how to use the program, instead of thinking about what you're actually typing."
Forget all the euphoria about computer graphics too: "Pictures on video screens are ugly, crude and garish, so they're called graph-

ics, which sounds more impressive and avoids embarrassing comparisons with real pictures. Bitmapped gaphics are hell to program, take forever to print, and really aren't very useful." I cannot recommend this book

too highly. Every sacred cow of computing, including computer magazines, Is dealt with merciles-It is the only computer book

have read in 0 single sitting, all 184 pages of it, and it should be available on the National Health.

Andrew Thomas



"Gentlemen, it appears we have a security problem. The secrets we recently 'acquired' were our own."

Superficial security

PROCEEDINGS of the First Security Conference held in May 1983 in Stockholm are reported in this North-Holland publication. The 44 papers presented have an verage coverage of six pages each.

The conference covered some 11 topic areas in computer security, ranging from auch general subjects as accurity management, DP security, public concern, risk manputers and the law, to specific subject areas such as access control and cryptograp

computer auditors, security specialists and trainers. For this reason, any one of the different classes of readers could find 50% of the material presented either too

As a security practitioner, I was poking for material which is both of practical value and at the same ume presents the subject with suf-ficient depth and insight. The result of my search was rewarded by some 11 papers, or 25% of the

The area on access control of computer systems was particularly well covered, ranging from guideNext comes cryptography and

teressing details, on key manogement and the use of the transaction seal for securing terminal systems. I enjoyed the paper on the impact of microcomputers on total computer security, which

discussed the various practical problems and possible solutions in various aspects of security.

I was a little less impressed with papers which were too brief and superficial or too academic aud theoretical to be of any practical

Ken Wong

Gloomy view of future

1984 and after: Changing Images of the Future. Nigel Calder. Century Publishing, London.

of the world in the mid-Eighties, made up of three elements: the first is an assessment of the accuracy of predictions made in 1964 by 100 sciemists, scholars and leaders of industry in New Scientist magazine, of which Calder was ther

The second is the reporting of the current state of work on everything from genetic manipulation to space exploration and weather opinings of the author, a writer with a scientific background.

As a result the book is often

hitty in style. This is not helped hy the contrived, dialogue form: the entire volume is taken up with a conversation hetween the author and a computer called O'Brien, the Omniscient Being Re-Interpreting

Every Notion.

O'Brien is also the name of the villain In George Orwell's novel

The success or failure of the book therefore rests largely on the reader's interest in the author's opinions and the accuracy of 20 year-old forecasts; this reviewer ound these clements irritating only partly relieved by the factual nformation on the state of the

The book is certainly compre hensive in ita look at the world with chapters on the broad topics of ecology, the Third World, biological research, automation and nuclear weapons. In most of these areas the author's cheerful style esmot hide a depressing picture of

John Kavanagh

blurred snapshot

Electronic Publishing - A Suspends of the Early 1980s. Edited by Hugh Lock, Learned

IMAGINE Computer Weekly puting together a random selection of festure articles from the last

the reader would get rather more than be bargained for and be ppointed by the bonus. Now you have an idea of what Electronic Publishing — A Snapshot of the Early 1980s is like.

The title is a come-on for a colction of brief articles on topics which are mostly only vaguely re-isted to electronic publishing. These ioclude privacy, expert systema, satellites, graphics

display technologies and local area When the book concentrates on

its supposed subject it is generally There is a good section on online database services, with details of database suppliers, market statis-

three years in a book and calling it ties and a user survey ahowing 1984 And All That.

It might sound enticing if you're s fan of that regular column, but the reader would are required as a supplier, and a user survey abowing everything from terminal types to the salaries of atail who do the file searching. There are also details of several

commercial information retrieval A chapter on viewdata concentrates entirely on the residential market rather than the business market, which is where most of the

activity is.

Elsewhere key topics get scanty trestment so that even the parts which do cover the topic of electronic publishing seem unba-

And less than two pages is spen on the impact of electronic pub-lishing on one of the groups most affected: traditional paper-based

The book is largely based on atticles from back issues of three journals published by Learned Information — and it shows. One section begins, "As we discussed last month..." while at onother is a reference to a propoint there is a reference to a pro-duct launch which "will be Jan-

uary 1982".
Sloppy editing such as this does little for a book which is already olnting in its coverage of the topic it is supposed to be

John Kavanagh

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calator is down"?

Where else could one learn the piural of Vax is Vaxen?

Or how to describe a bug

"This art farm has a bug."
"What do you mean? There
aren't even any ants in it."
"That's the bug."

Vocabulary of their own

The Hackers Dietinnary: A cldritch world of the dedicated function of computer buff the Wizards. Guy Steele It. Since the introduction of computer & Row, London. £3.50. Since the introduction of computer & Row, London. £3.50. Since the introduction of computer & Row, London. £3.50.

DICTIONARIES of computing as a rule are about as readable as A La Recherche du Temps Perdu. Normal humans are unlikely to pick one up and read right through from "Abelian Group" to "ZX80".

The Hacker's Dictionsry, however, is a shining exception to that rule.

From suttomagically" gutto manually but in a way which for some feason (typically because it is too complicated, or too ugly, or beingos even too trivial) the speaker doesn't feel like arplaining to "zorch" the reader is taken on a spuded tour of the strange and t

Since the introduction of computers to universities, a sub-culture has developed around them.

People use computers simply because they enjoy it—the infamons Hackers.

Hisckers apure the real world, those institutions where people into the infamons Hackers.

Hisckers apure the real world, example of the use of the term those institutions where people into the infamons had because it down? as succinct as "the up es-

simply as;

Andrew Thomas



The voters of New Hampshire are probably the most electronically evaluated population in the world. During the recent primary campaign, they were bombarded with telephone calls from various campaigners and received a mountain of computer generated post.

The effort was intensified, be cause each of the leading Democratio candidates employed his

HART ... His community community is user than profectly.

had 40 volunteers coming in by bus and that they needed canvass cards in Franklin by Sunday. ARE WE ASKING THE "It was 2pm in Honolulu when I illed VCS and it told me that the key punch tape for Franklin hadn't arrived yet, bur it expected We urgantly need a software package for a large raildential enliege (1,000 places, 300 different courses, 2,000 courses ataged each year, 150 instructors) in the UK. It soon. If the tape was in good shape it would take an bour and a half to run. The package must support: course brokings, aludent enrol-ment, remurce allocation (taschars, rooms, equipment, std), accommodation (900 rooms!) bookings, time-tabling, financial control and managament. It will also need facilities to interrogate the delabase for operational and manage-ment statistics and reports regarding a) students, staff and course details, b) room and equipment usegs.

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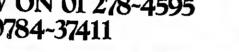
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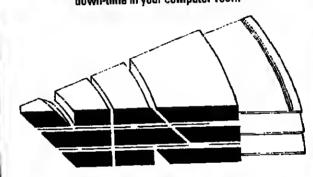
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The system uses the need for tripods, blackouts and so on. The company says the system can be used by people with no technical or photographic expertles.

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colour displays, a high-contrast black-and-white film for line graphics and text and a grey-scale black-and-white film for surveillance and medical displays.

Complete systems cost £320. Hoods withou a camera cost £115. Graphie Diaplay Systems (CW), Bright Haven, Robin's Lane, Lolworth, Cambridge CB3 8HH. Tel: (0954) 81074.

The resolution from the package is 768 picture elements by 512. Eight colours can be displayed from a palette of 4,096. On the software side modules include a graphics editor, with graphics functions called up from the keyboard. A built-in symbol generator enables users to create

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machine. And both can utilise the same database.

Di Sepd me a brochure. CI Let's put MODBL 204 in and benchmark Invito me to your next MODEL 204 Seminar: NAME. ADDRESS

escioto Tapiala Software, Tend

Portable laser bar code reader INTERMEC UK has announced a

portable laser bar code reader based on the latest CMOS technology. The Model 9420, intended for use in industrial, commercial and military applications, is provided with Intermec's Interactive Reader Language (IRL), a software package which simplifies the development custom applications. development custom application

programs.

The reader has a two-line 32-character display which allows the simultaneous viewing of operator prompts and scanned data. The display is casily read in direct sunlight, and o back-lighting feature allows reading even in total darkness, according to luterness.

darkness, according to Intermec.

The design of the alphanumeric keyboard is such that error-free keying is possible even if the user is wearing industrial gloves. The keys are large and wide spaced, and there is a an edge-rim on each to prevent mis-keying through finger slip.

ger slip,
The use of CMOS means the unit is light in weight and can run
a full eight-hour shift on its internal batteries. CMOS RAM
sllows data retention while the unit
is switched off.



The 9420 laser reader.

The Model 9420 is used in 8850 ciation with the Intermet Model 1600 laser scanner (or with a contact wand scanner). The 1600 allows reading with up to 25cms between the scanner and the subject Isbel. All scanner components nents are shock mounted and an impact absorbing rubber strip sur-rounds the housing.

The laser window is recessed to

prevent damage and the bousing is sealed to prevent ingress of rain.
Intermec UK (CW), Studio House 215 Kings Rosd, Reading, Berks. RG1 4LS Tel.: (0734) 67331.



A modern that supports all standards.

A modem for all standards

ALL major world communications standards are supported by the new £99.95 WS2000 modem from Minor Miracles.

The unit can be switched between 300 baud full-duplex, 600 baud half-duplex, 1,200 baud half-duplex and 1,200/75 baud wieswassa and surroussa Rall shape. duplex and 1,200/75 baud viewdata and supports Bell standards for the US market and CCITT standards for Burope.

These standards include Bell 103/113/108, Bell 207, CCITT V21 and V23 and RS232/CCITT V24 handshakes RTS, DTR, L.D. CTS, with Fox and full digital signal processing and filtering interfaces for home computers with no RS232 are also available.

Special facilities include reverse 1,200/75 baud operation, so the WS2000 can communicate with dedicated viewdata terminals. Options include an auto-dial and

auto-answer board which costs 8 total of £39. The WS2000 can be supplied as package or to systems builders as board with RS232 interfacing.

The company says that with its "very full" documentation and design, the WS2000 is ag easy to use with a BBC or Tandy microcomputer.

Minor Miracles (CW), PO Box 48, Ipswich IP4 2AB, Tel: (0473) 50304.

Quest is over for business micro subsystem

QUEST International Computers has announced the availability of the new Ampex Pyxis 5½ inch Winchester sub-system which is designed for use with a wide range of business microcomputers.

Interfaces are available for Apple, DEC, IBM and Intel

Microsystems, and software is also supplied to ensure efficient operation and compatibility with the host romputer, says Quest. The sub-system is available in s

range of colours.

The Pyxis offers fast dats access time and a dats transfer rate of five Mbits per second. It is available with five, 10 or 20 Mbytes' formatted capacity which means that the smallest version can replace up to 40 floppy discs. The capability can be incressed by the addition of higher capacity discs or up to two disc drives, says Quest. The system has been designed to

provide the utmost efficiency and reliability, consequently no main-tenance is required. The essential sttractive case which can be easily



The new Ampex Pyxis Winchester sub-system for business micros from Quest.

transported without risk of An important feature of the damage to the medis since the built-in spindle and stepper motor locks operate automatically when which inits construction. It is located in two isolated chambers which incorporate a closed loop re-circulat-

ing air system for protection Quest International Computers (CW), School Lace, Chandler's Ford, Hampshire SO5 3YY. Tel: (04215) 66321.

Put your work station on wheels

A MOBILE work station with nine square feet of working surface oo a floor ares of only six square feet, cspable of accommodating a complete mini computer-VDU system with room to spare for the user's documents, has been launched by Elf-Bretford.

Both working surfaces — one

The mobile workstation from Elf.

Both working surfaces - one 27inches high for typing, and one upper VDU shelf normally at the user's eye level — sre fully adjusta-ble, the modesty panel doubles as storage for connecting leads and cables, and four jumbo castors — two with brake locks — ensure easy mobility from one office area

Constructed in heavy gauge steel

which makes them suitable for educational applications.

Growth in the use of home com

puters, which have to be mobile for ease of atorage when not in use, is liable to be a further market.

Elf Audio Viaual (CW) 836
Yaovii Road, Trading Estate,
Slough SL1 4JG. Tat: (0753)

X-Data launches new daisywheel range

for higher volumes.

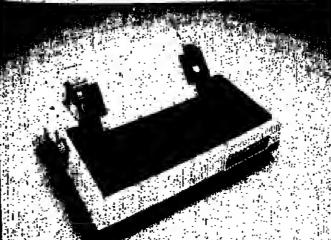
The DW16 prints bi-direction of the bird of t

at 20 and 36 characters per sec 12 table of pages up to 17 inches wide. Models are available with parallel or serial interfaces,

X-DATA's new range of Dyneer
Daisywheel Printers has just been can be supplied for both machines.
All three printers will provide an level printer and the DW20 and DW36 offer the speed and power for higher volumes.

The DW16 prints bi-direction of 1/48 inch and line feed of 1/48 inch and

X-Data (CW) 750-751 Deal Avenue, Siring Tradies Estate, Slough, Berkshire SL1 4Srl, Test (0753) 72331.



X Dala's DW 16 Daisy Printer.

G V BIN A complete text processing system for the IBM mainframe, under CICS, IMS/DC and ENVIRON/1

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MANTEXT is just one of the took in the MANAGE User Series, which currently includes MANGRAPH, for advanced business graphics, MANCALC, a 3-dimensional electronic spreadsheet and MANTIS, the inches and restricted to the inches and restricte the industry occidented 4th Generalian Longilog

For further information contacts Marketing Services.

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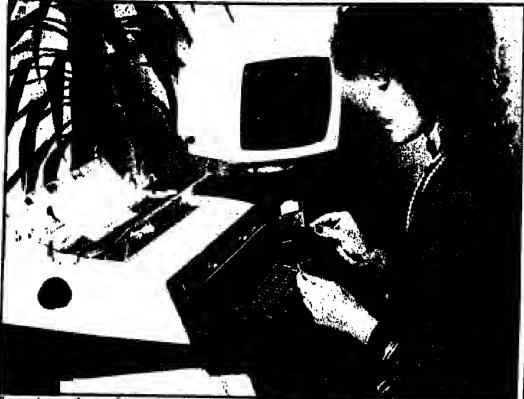
PRODUCTS Typewriter keys access screen logically

HERMES Precisa (UK) has launched the top-tronic 21 and top-tronic 51 typewriters with 24 line × 80 character screens.

Typewriter/screen systems need to access the screen from the type-writer keyboard, which means that certain keys have more than one function. As with all Hermes memory typewriters, these additional key functions have been designed to operate in a logical manner, eg key E is used for edit: M for mark; T for transfer; C for

Screen memory capecity of 32,000 characters is available on both new video units. The top-tronic 51 retains the 2½ in. microdisc, though the disc reader has been modified to read and write in a double-density manner, giving each disc 32K of storage.

The top-tronic 51 sllows the typisi to use the system in several niodes — as an ordinary type-writer; as a memory typewriter sophisticated folder/document sto-rage via the screen. Several discs with 101 memory segments; as a can be read into the screen unit traditional external atorage type-



Top-tronic typewriters can be used in several modes

writer; or es a typewriter with

The top-tronic 21/Video typing system costs £1,695 plus VAT, and the top-tronic 51/Vkleo is

priced at £2,795 plus VAT. Hermes Precise (UK) (CW), Hermes House, Ipswich Road, Colchester, Easex. Tel: (0206)

م الملتا عند الألهل

Move up from Fortran with ease

Limited (CTL) has introduced Momentum Fortran 77, an advanced implementation of the Ansi Fortran standard. Momentum Fortran 77 fulfila the complete Ansi Fortran standard X3.9 (1978); with the exception of an amended backspace facility. It offers facilities for programs with segmented atructures, and an efficient and flexible system of com-

piling and listing.

The compiler allows for segments of up to 32K, and enables the user to segment a program as required, while supplying the additional option of automatic segmentation. Data access has been extended to allow access to the full ange of DMS file bandling facilities, and Fortran 77 programs can be used with the DMS fast recov-

ery option.

A conditional compilation feature enables a debugging code to be placed in programs for testing, while allowing it to be excluded from the final compilation. To complement this, the compiler can optionally embed trace routines in the generated program, so that the logical flow through the code can be followed.

The compiler can also optionally generate map and cross reference listings, and these facilities allow for quicker and easier testing of Fortran 77 programs.

The compiler also allows uses to have integer within Fortran programs held in either one or two words, which gives high precises without causing a performance degradation for simpler programs.

The compiler can generate code to exploit fully the features of CTL'a Momentum 9000 competers with extended architecture. This results in considerable performance is the second of t

Fortran programs written for the

This lets the user make an easy

progression from a current Foring

system to a Fortran 77 system,

while giving immediate performance gains if the Momentum 900 extended architecture.

Computer Te chnology Lid (CW), Hempstead House, Selder Hill, Hemel Hempstead, HPI 1DP. Tel: (0442) 3288.

Fortran IV compiler.

Thenew range will be promoted in the university and higher educa-tion sectors, and is to be known as This results in considerable per formance improvements, paricularly for real, double precision and misc-Secapa. It includes a range of both monochrome and colour double word integer authmetic. terminals all offering features such There is also an option to me the compiler in a Forman IV mode, which allows it to compile as vector generators, selective erase and 4096 x 4096 addressable points with varying display resolu-

Modest application requirements are served by the 18741, a 15in display with 512x512 pixel resolution. The 18770 offers a 15in screen of 640x480 displayable points with up to four graphics pages and is capable of true alphanumeric operation with four character sets and a range of features

PRODUCTS

Raster range

aims at higher

education are met by the IS1020 featuring a 1024x1024 interlaced display. For colour there is the IS550 for hw-cost interlaced 640x480 point nounced a complete range of raster

graphics display systems to com-plement its Series II vector refresh viewing on a 14in screen and the 1S870 un a 20in screen. Both terminals feature 16-colour, two-page performance which will draw at a microsecond a point in absolute, remental and point to point

At the top of the range is 1\$1096 which produces images on a 1024x780 display with up to 16 colour shades from a palette of

All the linlac-Secapa terininals erable internal intelligence in their irmware. They can be addressed down line or through the standard slimline detachable keyboard. A light pen and tablet are available as onal input tools. In workstation configurations, a monoch-rome one-up and two-up 84x84 dot per inch graphics printer can be



The IS850 from Imlac.

supplied while for the colour systems, screen images can be pre-semed on eight-cohur hard copy.

With addition of the Imlac-

Secapa products, Imlac International now claims to offer the widest choice of all the CAD/Research applications graphics terminol vendors. The Amersham hased company caters for needs ranging from 512 point raster to 2048 line vector at prices from £1,800 to £15,000.

Most software is available for evelopers wishing to link their applications program through G LIB (rastor) and RGS (vector).

Imlae International (CW), Im-lac House, 17 Chesham Road, Amersham, Bucks HP6 5HN.



THE VT220, a monochromatic video terminal from the VT201 range, the latest family of monochrome and colour terminals by Digital, is now available from Ra-

The VT220 features a swivel-tilt 30.5cm non-glare video screen with an 80 or 132 column by 24 line display, connected by a 1.8m coiled cable umbilical to a new streamlined keyboard weighing

The lightweight keyhoard can easily be placed in an ideal working position and the 30mm key height redoces typing tedium, says Rapid Terminals. At each witch-on the terminal uniquiatically performs a self-test and gives m andio/visual assurance.

The hoard layout contains 105 keys and consists of a standard qwerty keypad, with a 10-key editing keypad to the right and an 18key numeric keypad beyond that.

The VT 220 has a keyboard weighing 2.04kg. The V I'220 is designed for data The VT220 is equipped with V152 V1100 emulation, built-in serial primer port, and US Euroat speeds up to 19.2K band. It supports tall duplex asynchronous pean modem controls. In addition, communications with ten possible the terminal features international capabilities including multinational cal choracter set, keyboard layouts

transmit/receive speeds.
Rapid Terminals (CW), Rapid House, Denmark Street, Fligh Wycomhe, Bucks HP11 2ER. Tel: (0494) 26271. available in 15 languages and a universal power supply switch



Momentum Business System runs on CTL's Momentum 9000.

Business system gives Momentum to users

Using printers in telegraph

AN interfece devaloped by Siemens for the PT88 printer, will enable the printer to be used in five-unit telegraph systems.

The PT88 gives the user a choice of needle impact dot matrix print head or an ink jet head that is almost silent in operation, says Siemens. The new interface the PIA No 1, enables the PT88 to be used either directly on a five-unit private wire telegraph connection on Thanks. Middlesex TW16 on Thanks. Middlesex TW16.

A NEW business software system, the Momentum Business System (MBS), from UK software Model 33 superminicomputer running in excess of 100 terminals.

Momentum Business System in Model 33 superminicomputer running in excess of 100 terminals. house J. G. Systems, offers users a complete suite of fully integrated business aoftware running on CTL's non-stop Momentum 9000

minicomputer range.

According to J. G. Systems, the Momentum Business System combines for the first time the cost advantages of packaged program products, with fully integrated transaction processing and the extensive communications combined. extensive communications capabilities of one of the world's most advanced minicomputer ranges.

The new system also offers the option of reallient non-stop processing and an easy upgrade path, starting from a two-terminal entry-level configuration up to the full power of CTL's dual processor

cludes software packages for sales order processing, stock and pur-chasing, financial accounting, financial modelling, time recording, payroll, customer mail-ing and letters and a word proces-

sor called TVtype, as well as many other industry-specific packages.
The cost of the MBS system pack is just £2,000 for a single user system including two days free training. The MBS package incre-ment is £300 s VDU. The software is fully supported and the annual maintenance fee is 10% of the CV-

mulative licence fee paid.
J. G. Systems (CW), Tring
House, 77-81 High Street, Tring,
Herts HP23 4AL, Tel: (644 282)

a backing card with instructions and details of the range. Wheo required, the written in-Storage up, prices down

Wipers pen and akio-packed on to

Butterfly Data Wipers from Wiggins Teaper

Re-usable data wipers

WIGGINS Teape Stationery is introducing a range of re-usable data control labels, marketed under the Butterfly brand as Data Wipers.

Designed for stilling or labelling and the stilling of the the sti

Designed for titling or labelling all magnetic media where the stored information is changed regularly, Butterfly Data Wipers are stif-sdhesive labels which may be wiped clean and used again. The labels are aupplied with a special Wipers pen and akin-packed on to

ZENITH Data Systems has an-nounced enhanced storage capa-city and price reductions of up to 13% for its Z100 range of desk-top

New models with increased stotage capacity have been incroduced to the Z100 range. The ZF-100-20 flexible disc system has a storage capacity of 1.28 Mbytes which doubles the capacity of existing flexible disc models. A new 11.7 Mbyte Winchester drive model with a back-up capacity

of 640K bytes is introduced. Prices now start at £1,795, inoluding a range of free software options. The ZP-110-22 low-profile flexible disc system with a storage capacity totalling 640 Kbytes has been reduced from \$2.376 to £2.295.

Zenith Date Systems (CW), Bristol Road Gloucester GL2 6EE. Tel: (0452) 29451.

Wiggins Teape (Stationery); (CW), Grove Road, Chadwell Heath, Romford RM6 4XL, Easex, Tel: 01-590 7777. Laser-based data link

A LASER-BASED data link for outdoor applications which is claimed to have significant advantages over existing free space systems, has been developed by

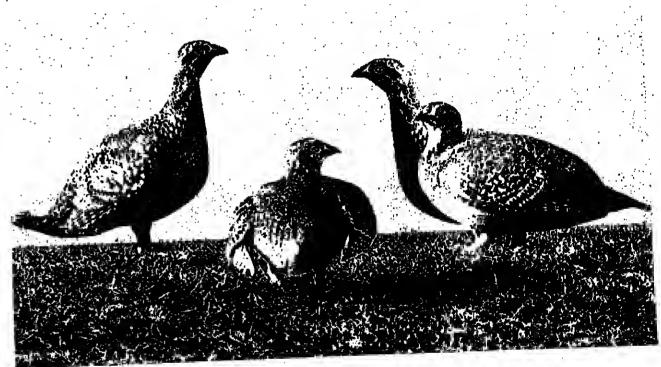
Called Superlink, it returns high reliability figures over free space distances of up to 1km and has high bandwidth making it suitable for transmitting and receiving, is addition to data and speech CCTV picture signals and control information, says EEL.

The high bandwidth also enables the link to be configured for multiplexed data channels.

Signals can be sent and received by either end of the link via 1km

rore-optic insk.

ERL (CW)₁ Kings Building,
Castle Street, Cowes, Isle of
Wight PO32 6RH. Tel. (0983)
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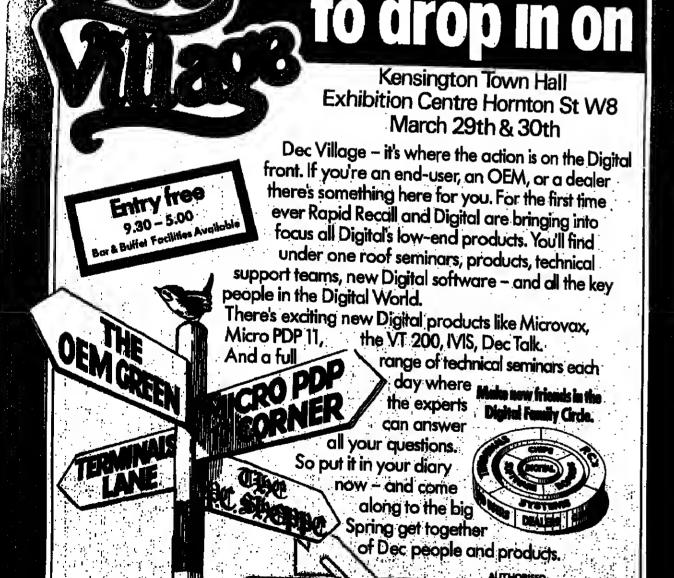
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Support Programmers

The Computing Division of the Rutherford Appleton Laboratory provides a service for SERC sponsored researchers in Universities, Polytechnics and SERC Establishments. Pile handling and program development facilities are provided to this large user community through IBM's VM/CMS operating system running on an IBM 3081D. An ICL Atlas 10, currently running MVT/HASP but shortly to be converted to MVS/JES3, provides the main data

ractive facilities, mainly in the graphics and database areas, are provided by a network of PRIME, GEC and

Interactive incilities, mainly in the graphics and database areas, are provided by a network of PRIME, GEC and MAX mint-computers sited at the Laboratory and at a number of Universities in the UK.

Yacancies exist for support programmers in the User Support Group:

Support programmers are required to provide user support of the VM/CMS and of MVS/JES3. Duties include liability with users, offering advice and guidance with problems, documentation, user education and implementing utilities. Applicants should have skills in Technical Communication, a broad knowledge of camputer systems and some programming experience preferably in FORTRAN. Pamiliarity with VM/CMS or MYS/JES3 operating asserted would be an advantage. ems would be an advantage

Applicants should have a degree in Computer Science or related subject.

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Contact Recruitment Office, Rutherford Appleton Laboratory, Science and Bugineering Research Council, Chilton, Didcot, Oxon, OX11 OQX, or telephone Abingdon (0235) 445435 quoting reference

Closing date for applications: 30th March 1984

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VSAM, VTAM, COBOL, ROSCOE, PAN VALET, IDMS.

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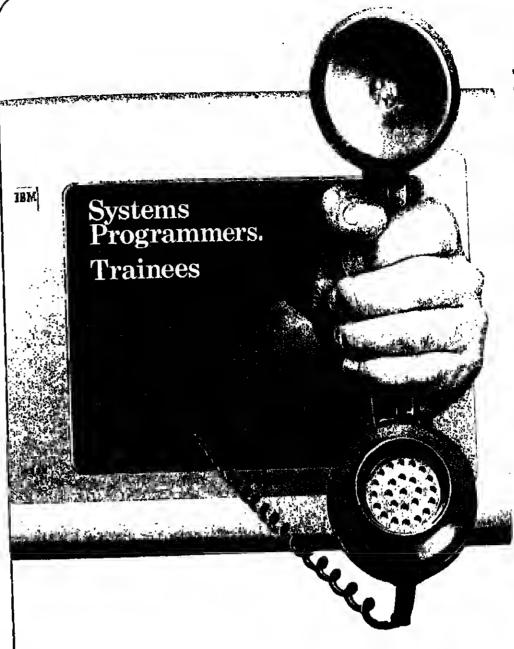
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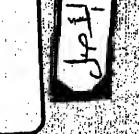
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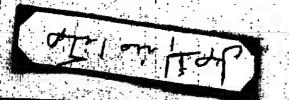
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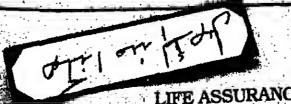
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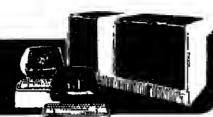
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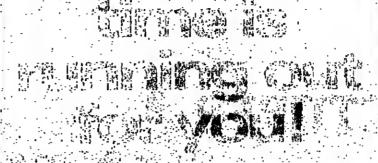


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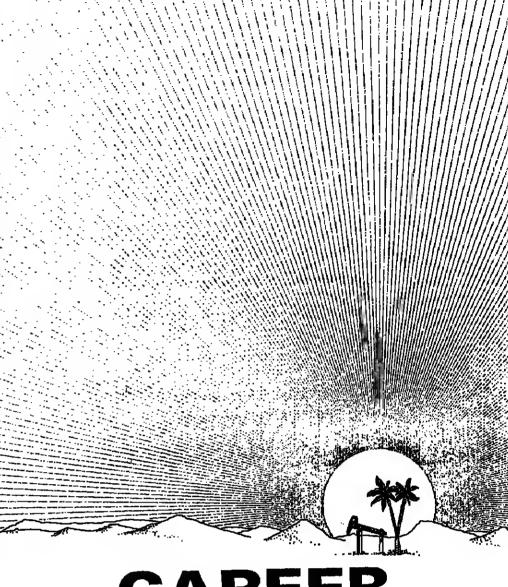
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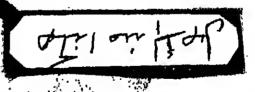


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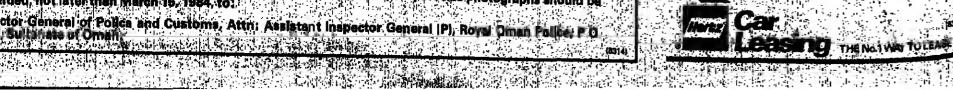
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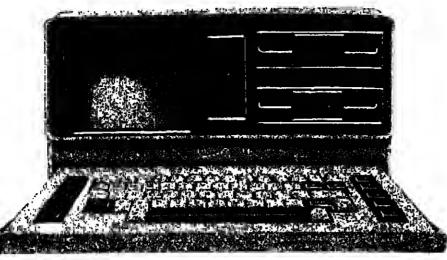
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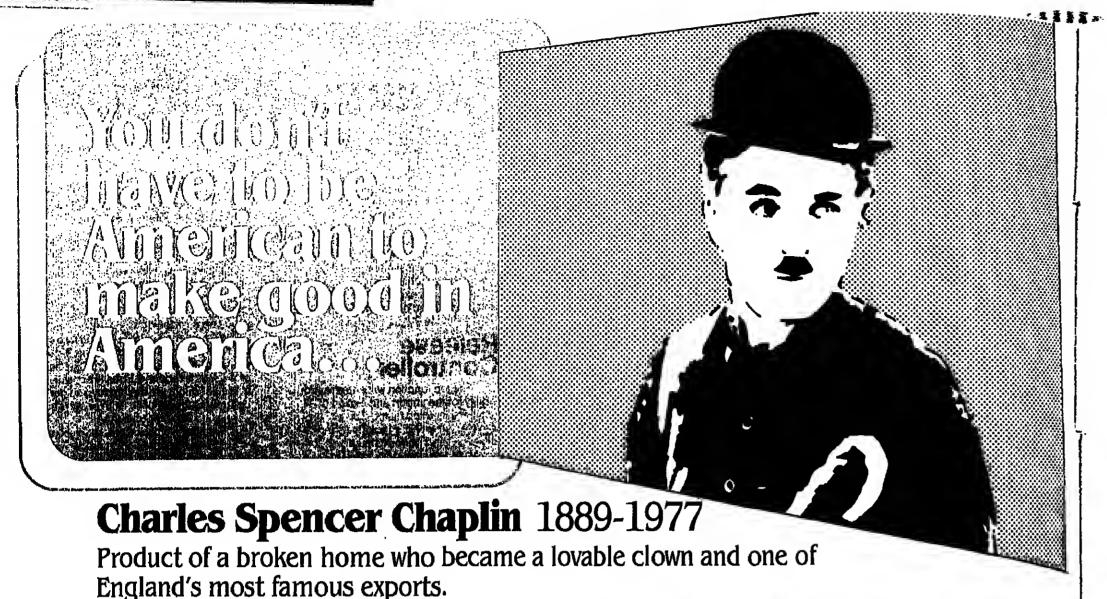
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Charles Spencer Chaplin was born in London, on April 16th 1889. His parents divorced when he was young; consequently, he and his brother spent their childhood and youth being cared for in a Lambeth children's home. Young Charles had stars in his eyes at a very early age - by the time he was 19, he was already a star performer with the famous Fred Karno's Comedians. The troupe's tour of America in 1913 was a raging success, not least for Charles who was contracted by a certain Mack Sennett to join the famous Keystone Studios. During that first year, Charles made no fewer than 35 one reel comedies.

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wanted to develop his characterisation of the "little tramp" - the pathetic but lovable clown who sported the derby hat, exaggerated shoes, baggy trousers and tight jacket we have all come to recognise so well.

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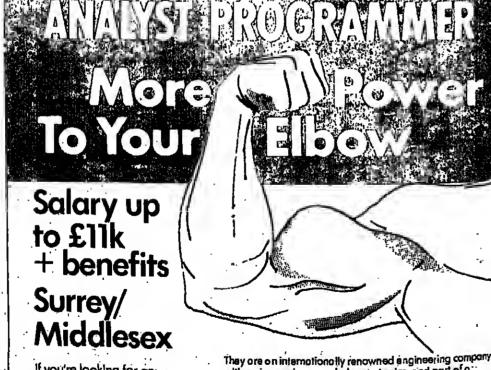
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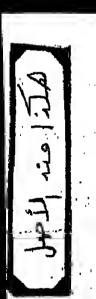
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COMPUTASTAFF

FREEPOST, London SWIH 9BR. 01-222 6722.

COMPUTER WEEKLY March 8 1984 65

The Council is currently introducing a Wang information Processing System which is being used extensively for word processing with some data processing applications and now needs to be progressively developed to allow for its full potential to benefit the Authority.

To undertake this work we need two highly motivated stall with a professional background in micro-computers and word processing to essume overall responsibility thr consolidating the work stready done and for the future development of the Weng system. Those staff would form part of the Ceutral Computer Development Group which will ultimately report direct to

Office Systems Manager

(Word Processing)

Grade PO1A Salary £9945 to £11,052 p.a. plus £77 London Waighting

To menego and co-ordinate the Wang Notwork in relation to word processing, providing advice to Council departments on the use and development of the system. There is also a major priority to identity training needs and employment training programmes for operators and line managers. Ret: C/506

Office Systems Manager

(Technical)

Orade PO1B Selary £10539 to £11703 p.e. plus £777 London Weighting

To manage and co-ordinate the Wane Network in reletten to its Date Processing capability, including the evaluation of all new applications. To be the centre of compatence on all data processing and communications aspects of the statement of the processing and communications aspects of the statement of the processing and communication metters. Rat: C/507.

BRENT IS AN EQUAL OPPORTUNITY EMPLOYER. JOB SHARERS WELCOME

APPLICATION FORMS UNLESS OTHERWISE STATED FROM THE PER-SONNEL DIVISION, ROOM 1, BRENT TOWN HALL ANNEXE, KINGS DRIVE, WEMBLEY, MIDDLESEX. RETURNABLE BY MARCH 28th. TEL, \$1.903 0371 124-HOUR ANSAFONE SERVICE).

REFERENCE NUMBERS MUST BE QUOTED.

London Borough of

BRENT

BUCKINGHAMSHIRE '

AYLESBURY COLLEGE OXFORD ROAD AYLESOURY HP21 6PD

Applications are invited from men and woman for the following post in the Dapartment of Science in

LECTURER I IN COMPUTER STUDIES/ MATHEMATICS

Applicants should have graduate or prolassion at qualification a, pleiarably in Computer Solence. The courses currently teught include B/TEC Diploms in Computor Studies, GCE 'O' and 'A' lovel, TEC, BEC, as well as a variety of short courses. A knowledge of modern microprocessor incory and electionics would be an advantage. s would be an adv Duties to commence Saptember

Salary: Locturer t £6,649-£9,735. Assistence with removals and othor expenses will be provided to

Application forms and further particulars for the above post may be obtained from the Principal Jupon raceint, of a stamped, addressed to clean penvelope I owho m completed forms should be roturned within 14 days of the appearance of this advertisement.

UNIVERSITY OF CLASGOW Computing Sarvice APPLICATIONS PROGRAMMER AND ADVISER

Interested in applications program-ming, and is helping others with their programming problems? Further conticulars of a vacency, for which the selory is currently in the renge from C7, 199-£11,815 per annum (but due for revision w.e.f. tet April), may be obteined from:
The Academic Personnet Office, University of Olegow, Clasgow, G2 9QQ. Clasing date for applicational 30th March, 1984.

reply plaase quate Rel. No. 5100/2P

LUTON COLLEGE OF HIGHER EDUCATION Perk Square, Luton, Beds Dept. Maths & Computing SENIOR LECTURER IN COMPUTING

A Benter Lecturer is required as soon as possible to play a deading role in the devalopment of STEC Higher Netters Courses in Computer Studies. Ability to teach Systems Analysis/Osto Proceeding and provious experience in SEC/TEC courses would be an advantage. Salary: 51. Scale £10,883-13,443.

Oarella and application of orm from Assistant Oirector, LCHE, Putteridge Gury, Hitchin Goad, Luion LUZ SLE, Tal. 1082/3411, axt. 740. To be returned by March 23rd, 1884.

· 18199

NATIONAL ASSOCIATION OF

CITIZENS ADVICE BUREAUX **MICROCOMPUTER** PROJECT MANAGER (Three Years)

This Association is currently implantaning a Research and Development Project to introduce and apprecise the application of microomputers in a sample of CABx over a three-year period. The alm of the project is to determine whather microomputers would improve the service offered by the Bureaux to the public, and to identify and develop relevant software logalizer with NACAB support staff and Bursaux.

The Project Manager will be responsible for the operation and management of its staff, negotietion with santral and local Covernment, fund reising from a variety of sources including sales of systems, listery with the computer field, and in particular tipicon within the CAB service.

Applicants must have management and pomputing skills, together with a cound knowledge of service and research work. The successful cantidate will be assed in Central London, but will be required to travel throughout the U.K. A car owner/driver is assential. The post will be offered on a three-year contract. Selary will be commenced with experience.

For job description and application form please WRITE on

For job description and application form please WRITE on a postcard to: Heat of Personnel NACAB

NACAE
110 Drury Line, London WC28 58W
110 Drury Line, London WC28 58W
110 This DATE: MARCH 21, 1984
All out lite, as to liste and a Laste of standbully, for post regardless of sell, 140e, mental status or disability.



POLYTECHNIC OF THE SOUTH BANK Menor House, Ciephem Common, SW4

OFFICE TECHNOLOGY UNIT

The Office Tochnology Unit which exists to provide Open Tech courses in Office Automation requires the following personnel:

SENIOR LECTURERS/LECTURERS

Grade II |Full or part-Ilmej Office environment/Dilice eutometion. Ref: OT.13

Those courses are for office workers who went to know more about new technology and its effect on their working lives. The course is based on a place of that technology—the BBC micro. This will serve to give students lamilierity with the microcomputer and its applications, as well as being a vahicle for computer aided learning. This work cuts across treditional disciplines and Lecturers are required with beckgrounds in information systems, information technology and environmental engineering; with interests in the office, office practice, and new technology. They will be working on the production of distence learning materials using a veriety of media perticutarly text, audio-teps and computer aided learning.

Two full time poets are evellable as well as part-time contracts for facturers to work on specific topics. Salary will be in the range:
Sonior Lecturer: £11,670 (×6) — £14,430 pe} Inclusive of Lecturer, Grede II £8,202 (×10) — £12,555 pe} London ellowance

Starting ealory will be dependent upon qualifications and experience. **PROGRAMMERS**

Selery up to c.fB,000 pa inclusive of London silowance. Raf: OT.12.

Students will work on their own BBC micros using commercial soft-were and specially produced aducational programs. Two programmers ere required to produce computer aided learning packages working in conjunction with teaching staff. Grephics experiance and BBC besic essential.

MICROCOMPUTER TECHNICIANS

Salery up to £8,000 ps inclusive of London silowence. Ref: OT.11.

Studente will be working on BBC microcomputers and much of the program development will be done within the unit. This will include a lot of graphics work.

Two techniciens are required to look after the atock of microe and software, to interfece mechines and peripherels end help in eystem tasiing. HND/BSc in electronics or computing preferred eithough e traines with micro experience might be considered.

Further deteils end epplication form for eny of these posts may be obtained by writing to the Staffing Office, and calling a self-addressed envelope not amalier then 10" × 7" at:

Polytechnis of the Bouth Ban

Borough Road, London SE10AA Closing date for receipt of completed applications will be 30th March, 1984.

UNIVERSITY OF LIVERPOOL LECTURER

Applications are invited for a post of Locturer in the Department of Computer Science. Candidates may have research experience in any non-numerical area of Computer Science but applicants with research interest in expert systems, databases or artificial intelligence will be particularly welcome.

Candidotes should normally pos-sess a higher degree in Computer Science, or have aquivalent in-dustriol or academic experience. The appointment will commence on 1st May 1984 or a date to be arranged, and will be on the sesia E7,190-E14,125 p.a.

Applications, together with the names of three referees should be received not later than 28 Merch, 1984 by the Registrar, The University, P.O. Box 147, Liverpool, L69 38%, from whom further perticulars may be obteined.

Quote Fet: RV/238/CW

UNIVERSITY OF READING COMPUTER CENTRE

SYSTEMS **PROGRAMMER**

A Systems Programmer is required to join the group developing and maintaining systems self-ware within the Computing Service. The Contre operates an Amdahl 177A, running VANCMS and UTS and 3 Norsk Osta machines, plus an extensive X25 campus packed-witched network. The Centire is size connected to the National Censes at London and Manchestar. The Programmer's main childs will lie in the VMCMS group, and lamitismity with this or enother 16M system would be an edwantage. Applicants should possess a degree and relevant postgradeste experience. The post is a permanent one on sither Orade IA [27, 190; C.11, 219 p. a.] pro Orade IX [27, 190; C.11, 219 p. a.], according to exite (£11,160-£14,125 p.a.) or Orada II. (£11,160-£14,125 p.a.), according to experience. The post earnes U65 superanuedon. Apply, quoting Raf. R.11A, for application form and further details to Personnel Office, University of Reading, Whiteknights, Reading RGS 2AH. Closing data 25. 34

(8228

YORKSHIRE REGIONAL HEALTH AUTHORITY REGIONAL COMPUTER CENTRE - HARROGATE

The Regional Computer Centre provides a comprehenaive service to users in 17 Health Authorities and has a number of vacancies for qualified end experienced staff. A new computer centre is in operation working on en ICL 2986 with gatensive communi cepablities together with verious mekes of micros/minjs,

The computer applications gover a wide range of activities including medical, hospital administration and financial control, all of which may be provided on the above hardwere.

Systems Designer/ Programmer (Scale 4)

A number of posts are required to be filled at the above level by applicants with a sound educational background together with two or more years' practical design experience excluding training.

Formal training in Systems Design and/or Programming is required and applicants must have proven dapabilities to design and/or program major programs or settions of systems. A good knowledge of large maintrains, milli or mioro domputats will also be necessary together with experience of structure design methods which are used in all areas of work.

Which are used in all areas of work.

Saldry teste £7,404.£9,028 p.a.

Application forms and lot trachignors, and tradiable from the effective forms and lot trachignors, and tradiable from the effective forms. Park Parada, Harrogate HB1 5AH.

Please quote Reference Number AC 86

Closing date: Maken 25, 1884

GLC Working for London

Systems development for a

vital emergency service

Team Leader

Lundon Fire Brigade

As a department of the GLC, the London Fire Brigade is a major user of the Council's massive 13M mainframe facility. It is also repidly developing highly sophisticated local systems, utilizing personal computers and advanced sultware, for its 11 Divisional Offices controlling 11-t fire stations.

This challenging new post has been created in direct response to this dynamic increase in computerisation and as such, provides an exceptionally stimulating opportunity for a talented analyst/programmer with at least 2 years' professional experience in local government of their relevant computing environment and a working knowledge of 1BM OS and ADABAS NATURAL.

Responsibilities will entall heading a small team in the development, co-ordination and progress of new systems and the maintenance and enhancement of systems that the material contribution of the free existing facilities, providing interface and technical support to users within the Fire Brigade. There will be scope for involvement at all stages, from problem sasesament to implementation. Contributing to the evaluation of hardware and software will be an essential part of the work.

A high degree of initiative is called for, together with good communication skills and a sound knowledge of personal computing techniques. This post is suitable for job sharing.

Salary: £6,685-£13,935 inclusive. For an opplication form, to be returned by 23rd March 1984, write to: Personnel 3 Section, London Fire Brigade Headquarters, Alben Embankment, SEI 7SD or telephone 01-735 4854.

The GLC walcomes applicants from all sections of the community, irrespective of their sex, ethnic origin, colour, sexual orientation or disability, if they have the necessary es to do the job.

7he GLC is an equal opportunities amployer

UNIVERBITY OF LIVERPOOL

Computer Laboratory SENIOR PROGRAMMER/ANALYST

Applications are sought for a poet in the Administrative Computing Section with special responsibility for the specification, development and implementation of computer systems for the Buildings Services Department. This department has responsibility for the management of the University egiste, maintenance of buildings, mechanical and algoritical plant, and anargy control associated with a large matterior. Initial developments will utilize codesyl detabase tachniques on modern transaction processing system (Honeywell DPS7), but future developments will incorporate distributed systems, including microcomputers. Successful candidates will become part of a large team of programmer/onolysts which support both administrative and accidentic computing services on a wide range of machines, including 16M, ICL, DEC and Honeywoil.

Candidates should be graduates, and experienced in the use of

Candidates should be graduates, and experienced in the use of codeeyl databases, Cobol, knowledge of Fortran en adventage. Selery in range £9,875-£11,816 p.e.

Application forms may be obtained from The Registrar, The University, P.O. Box 147, Liverpool L69 3BX. Quots Ref. RV/230/CW.

SOCIAL & COMMUNITY PLANNING RESEARCH

PROGRAMMER

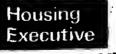
SCPR, an independent social research institute requires a programmer to joir a sufficient concerned with the processing and analysis of data from a series of individual research studies, and with the development of a variety of related and general applications.

The institute hee links to an external VAX computer running UNIX, but an increasing number of applications are being developed to run on in-house inforcemputars. A sound computer beckground executionally and the ability to communicate will will non-computing staff at all levels are assential for the job. Experience in handing saver data would be a distinct adventage.

nets would be a distinct adventage. Balary in the range £7-10,000 according to experience and qualifications. Please write or telephone to obtain further datelle and an application form to the Deb

36 Northampton Square, London EC1V OAX. 01-250 1866

NORTHERN IRELAND HOUSING EXECUTIVE



COMPUTER SERVICES CO-ORDINATOR Ref. No. 38/2761

SALARY SCALE £16,899/£18,534 per annum LOCATION: Based in Belfast

The Northern Ireland Hausing Executive is the Iargest Housing Authority in the U.K. military in the International Structure to both for provides a comprehensive service through a central and regional structure to both for Public and Private Sector, in its attempt to improve housing and social conditions with Province.

As part of its policy to improve services et all levels, the Housing Executive has devalued a computer already which will involve the extension of computer facilities into many a lapticalized.

We are therefore seeking to recruit a suitably qualified professional to contrast strategy.

DUTIES: The Computer Services Co-ordinator will be responsible to the Director of Personnel and Management Services for the provisions of Director of Personnel and Management Services for the provisions of a comprehensive computer applications, both hardware and software introducting communities. Applicants must hold a resevent degree of an equivalent strategy qualification and be able to demonstrate antensive sometimes qualification and be able to demonstrate antensive sometimes of major computer systems letterly gained as a Consistent Manager, sto. A topoxisadge of microcomputer hardware and self-through the self-through through through through through the self-through through th

The Checkout Company offers its customers a complete service in providing hardware, software and maintenance on all the products it supplies.

The products and services developed by Checkout cover a wide range of computer related projects in commercial, industrial and service related fields.

We are a young company and as a result of being awarded a large contract we are recruiting the following personnel:

ELECTRONIC SYSTEM DESIGNERS

With microprocessor and system design experience to spearhead exciting new developments undertaken by Checkout in the computer systems field.

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To lead an expanding team of field support personnel. Field service managerial experience is essential, along with a good hardware and software knowledge in the mini and micro fields.

FIELD SERVICE ENGINEERS

Experience in sophisticated integreted point of sale network anvironments would be an advantage.

If you are interested and are looking for a rewarding and challenging ceraer with all the benefits a rapidly expanding company has to offer please write with full C.V. to:

Mr H. Chelache **Checkout Computer Systems Limited** Trimoco House 2 Victoria Street (HE(KOUT LUTON Beds

Marconi Space and Detonce Systems is a leading company in the design, development and manufacture of a wide range of high technology systems and equipment for civil delence and aerospace markels

We have the following vacancies in the Business Systems Department at the Broad Oak Works

SYSTEMS & **PROGRAMMING** MANAGER

Responsible to the Business Systems Manager for a D/P stail of eight who are currently engaged in the early stages of implementing a major online integrated manufacturing/costing system. The Systems & Programming Manager will be educated to degree standard and will have at least 3 years' managerial experience in a manulaciuring environmeni.

The successful candidate will be able to demonstrate systems and data base design and implementation success, preterably on IBM Main-irames using DLI/IMS, and will be responsible for the development and support of existing and future bespoke applications to enhance and complement the system.

PROGRAMMER 1

Marconi

A minimum of t year's Cobol experience on tBM Mainframe running under OS and iMS/DC or CICS

Space & Defence Systems

is necessary for this position.

Reporting to the Senior Programmer. dulles will include Programme coding. testing and documentation to standards defined by the company A knowledge of CMS, TSO, RAMIS. FILETAB or DL/1 would be an advanlageous.

ANALYST PROGRAMMER

Reporting to the Senior Systems Analysi, duiles involve all aspects of programming on both existing and new systems; analysis, design, speciiication and implementation of systems necessary for the enhancement of a major on line integrated manufactur-

ing and cosling package.
A minimum of 3 years solid
Programming/Systems experience (in a manufacturing environment) on IBM Mainframe using tMS/DC. DL/t is required with education to at least 'A'

Attractive salaries and benefits packages commensurate with the levels of position are offered, together with relocation assistance where appropriate.

Please apply in writing with full cv. including current salary, to Averil Jakeman, Marconi Space and Defence Systems Limited, Broad Oak Works, The Airport, Portsmouth, Hants PO3 5PQ or telephone 0705 664966 ext. 4217 for an application

in lind



COMPUVAC

COBOL PROGRAMMERS

We currently have a large number of openings for COBOL Programmers, ideally you will have worked on IBM maintrames for at least one year and have some knowledge of software, especially CICS and DL1 or IMS. Vecentiae exist in and eround London.

REF. LD/CW PL1 PROGRAMMERS TO £11,500

A number of cliante beeed in London and the Home Counties are fooking for PL1 Programmers et all levals. Any experience of CICS or IMS would be edventegeous but not mendetory and most opportunities offer a good career path into Senior Programmer and Analysis positions.

ANALYST PROGRAMMERS

TO £14,000

Our client besed to the South Wast of London is urgently seeking Analyst Programmers with a good knowledge of COBOL or PL1 on MVS or DDS systems. You should else have exparience of on-line systems working from lessibility through to implementation.

REF. LD/CW TO £19,000 SYSTEMS PROGRAMMERS

Based in the London area, our clients are looking for experienced people with a aound knowledge of DOS, VM or MVB systems. Applicants must have experience of some of the following: CICS, ACF, VTAM, DL1, IMS, TSO, SNA. A number of the positions include generous benafits peckages.

TO £20,000

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TO £12.000

SYSTEMS ANALYSTS TO £15,000 Candidetes should have up to five years' experience in Analysis and would have san a major project from feasibility through to implementation. You should possess good communications and supervisory skills and preferably have worked on the detabase side, Positions are based in Home Counties and London.

IBM CONSULTANCIES

A large eoftware house based in Central London are looking to recruit senior deta processing personnal in a number of areas with sound IBM mainframe experience on OS or DOS/VS systams. A previous programming background in ASSEMBLER would be desirable as is proven supervisory or management experience.

SYSTEMS DESIGNERS

TO £13,000 A number of clients in Greeter London are looking for Systems Designers with at least two years' experience in Analysis and Oesign. Applicants should have good user communication skills and have project control and implementation experience. A programming background is preferred, especially at senior levels so the positions are more technical than business orienteted.

REF: RC/CW

RPG3 PROGRAMMERS

TO £14,000

Vacencies exist in eil srees including banke for experienced System 3B professionels. Job duties range from rewrites for conversions to training in financial ensiyes. Minimum of one year's RPG3 experience. REF: MB/CW

Three progressive, expending software houses ell based in the Greater London eres have requirements for confident RPG professionals with good orel and written communication skills for consultency roles. Previous software house experience an advantage but not essential. REF: MB/CW

UNIVAC 1100

TO £14.500 Demend for 1100 professionals is currently very high with positions all over the Greater London area but particularly in the Northern Home counties. Any T.P. or Database experience would be advantageous.

REF: CC/RW

IDMS/TPMS PROFESSIONALS

TO £15,000 A minimum of one year's experience of IDMS or TPMS coupled with a sound ICL COBOL background can accure you a career move well worth taking. Standards are high but so are the rewards. If you feel you can fit the bill, call now!

HONEYWELL COBOL -

TO £15,000 Level 64 or 66 experience is required by our client for roles as Programmer or Analyst/Programmer on development projects. Experience of at least one of the following preferred: DMIV, IDS, TDS.

REF: CC/CW



253 5042 **250 0456**

COMPUVAC HOUSE

121-125 City Roed, London, E.C.1 (NEXT TO OLD STREET TUBE EXIT 1) OR SEND C.V. TO

COMPUVAC FREEPOST EC18 1EN

RECRUITMENT CONSULTANTS

Big firms in the Midlands are stepping up recruitment, says Nigel Whitnall

brush off the dust of the recession and are gradually stepping up recomment, but they still prefer born and bred Midlanders.

Some companies are looking only for staff with at least 18 months' experience, others only for trainees, but generally the Midlands computer scene is starting to

buzz again. Midlands industry is dominated by maintacturing. British Ley-land, including its DP offshoot Istel formerly III. Systems), and llass Churrington are major computer stall recruiters, although the largest computer staff is at Kala-mazon, which employs some 400

"Over the last nine months,

141)R those thinking about a jub in firms have taken on people they the Midlands, now is the time to really needed two years ego." says try. The big lirms are beginning to

"Now iliere are a lot more va-

On the programming side, sala-ries ore on the low side (see Toble 1). Minimum experience required is usually 18 months', and 1BM experience in particular.

More specifically, experience on the IBM 34 up to the 38, and with RPG 2 and 3, is advantageous.

PROGRAMMING SALARIES

Job Programmer (two years' experience) Senior programmer (four years' experienced plus) Analysi (two years' experience) 7,000-8,000
Seniur analysi/project leader 9,500-12,500
DP menager (small company)/systems manager 13,500 plus company ce

OPERATORS' SALARIES

Job Operator Shift leader Network controller Average salary (£) 5,000-7,500 7,000-9,000 8,000-11,000 10,000-12,000

Knight Programming Suppurt.
"Before that, meny companies

had self-imposed bens on recruitment. Saluries were held down because there was a mountain of experienced staff and not enough jobs to go round.

cancies, but still quite a few people going for them. Midlands companies have a good selection."

At ICL instellations, VME ex-

Average salary (£) 6,500-7,500 9,000-11,000 7,000-8,000

Midlande salaries for operators re generally good as can be seeo in Table 2 es much as £2,000 higher than comparative seleries in Man-

perience is usually required. The other prominent hordwere used in the Midlands is Univac – combined with "good Cobol experience". On there herdware, firms ere field collection that the modern of th

ere fairly eclectic in their testes. The less nine months have seen more steff flow in end out of the Midlends. "People have actually been coming from London to us, says Taylor, "elthough they often have to take e £1,000-£2,000 drop

"One wuman who was working for a softwore company in London dropped from £10,250 to £8,750 when she moved to the Midlands," she adde.

Midlanders are now happy to

move away to areas such as the Home Counties, Shropshire end Worcestershire, where generally the property is better and weges

For graduetes aiming to enter programming, the outlook is not bright. Most ageocies will not take firms such as Istel and Luces have a steady intake. Most graduetes go to London for their first job.

chester or Stoke. A lot of operators move into the Midlands, and so average requirement would be for 18 months' IBM experience.

ICL firms will recruit only

ners-Fenion. Government-connected bodies

seem to have come out of the recession better than their commercial counterperts. The City of Birmingham Computer Centre, for Midlands salaries for

operators are generally good - as much as £2,000 higher than comparative salaries in Manchester or Stoke

example, run by the Metropolitan District Council, is showing heal-

Requirements have been growing in Birminghem," says a spokesman. "We heven't really been affected by the recession. We were expanding all through lest maioly on the development

The Centre recruits between six and 12 experienced trainees a year. Minimum experience required is usually about three years' on the ype of job being applied for. "Over the last two years we've tended to recruit more Tops people than graduates," says, the

THE REAL PROPERTY.

THE REAL PROPERTY. 不明問題記

HEURIN

spokesman, who envisages n
"steady increase" in jobs evailable.
Midlands Electricity, thanks to
a union agreement, has had n firm policy of "trainees only" for the last eight years. And the majority of trainees are local graduates. Experienced staff opplying from outside automatically placed on the minimum salary for the grode.

A spokesman claims that the company has not been affected by the recession, rather It has "helped to reduce turnover on the systems

side". The company is currently recruiting about four people

On the commercial side, Ba Computer Services' recruitments
"fairly stotic", according to pesonnel manager Brian Philips. The company geoerally protest graduate trainees to people w

Phillips is strictly selective 200 his recruitment at all levels About 20% of people who seed in curriculum vitaes get intervier he says. "Of those, we take out

Automotive Products

primarily engaged in the manufacture and distribution of motor vehicle components, (e.g. Borg end Beck Clutch, Lockheed Breke Syetems etc), Automotive Products is a world wide organisation with a strong UK base, Isrgely centred in the Midlends. The Automotive division, Benbury Is the hub of the company's replacement parts operation and is one of the largest specielist vehicle component

An Independent group of compenies,

The town of Banbury is repldly expanding into e thriving commercial centre but still reteins much of its old market town atmosphere. Situeted on ths edge of the Cotswolds, Benbury end the surrounding villeges provide e pleasant environment in which to live. A number of opportunities now exist in our Computer/Systems

Departments: The instellation comprises a twin IBM 4341 configuration with 8 MB of etorage eech, 16 x 3370 disks, 4 x 3420 topes end e network of epproximately 200 terminele located in Benbury and sround the country. Production systems ere bessd on COPICS end MSA epplication packages, running under CCS/DL/1 and DOS/VSE. Development end personal computing facilities are provided by VM/CMS...

We have vacancies for:

SYSTEMS **PROGRAMMERS** POS-, with 3 or more years experience

in maintaining DOS eyetem with knowledge of POWER, CICS, DL/1 and

VSAM. VM: with 3 or more years experience in maintaining VM system. A knowledge of APL would be advantagoous

Communications – with 3 or more yeers experience of meinteining e SNA communications network using

DATA BASE **ANALYSIS**

With programming experience in CICS end DL/1 to meintein CICS tables and DL/1 control blocks.

APPLICATIONS PROGRAMMER/ ANALYSTS

Programmer/Analysts - between 2

end 4 yeers commercial systems experience using COBOL with CICS or DL/1 — Major projects include new developments in order control, distribution and financial systems. SENIOR PROGRAMMER - 4 years experience with CICS or DL/1 to be responsible also for the direction of junior and trainee staff. In addition to the sort of terms and conditions expected of e large, progressive company, Automotive Producte offers selaries which ere negotieble eccording to job stetus end experience end, where appropriate, will easiat with relocation expenses

For further information, end/or epplication form, please contact David Barrie, Computer Sarvices Manager, or Colin Rodde, Personnel Controller et Automotive Products ple, Automotive Division, P.Q. Box 14, Southam Road, Baribury, OX16 7QX.
Telephone Banbury (0295) 4421.

Betchelors is investing heavily in new, integrated systems which are forming an increasingly important part of the Company's operations. We ere introducing on-line systems across three sites, through e network of IBM 4300s operating under DOS/VSE. We now have a vacancy at our Head Office in Shef-

DESIGNER PROGRAMMER

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Park Centra during the course of sech week and equally making occesional trips to underteke the seme demonstrations in clients centres
throughout the UK.

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Project Leadership/Project Managament role for a minimum two years to
date. Past experience at some point of at least two years? COSOL programming is mandelory, with proference for having worked on a mejor
mehufecturer's mechine. The ability to present using a terminal and a
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essential, as is a high level of communication ability. We equally need
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issures as their compenies or services deem it necessary. As part of the
lesk, we anvisegs you cataloguing, defining and recommending appropriate enhancements constantly witch will improve the overall selecibility
of the package products themselves on a marketing advisory besis.
Equally, you should have the skille and abilities to specify the necessary
what an approximative manages, the application system development area under
the schittol of alternative manages and directore.
This task will report primerity to a marketing directorate and plays a
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Do you want technical chellengs?
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Equally, our policy is to generate a large volume of learns which tradi-

the minicomputer renge with a price retio ranging from £5,000 to £250,000.

Equally, our policy is to generate e large volume of leads which traditionally have been supported by Project Management and Support Directors. Sound career development opportunities are available for proven successful candidates who can contribute towards a significant increase in market panetration and sates within their first two years with the compeny. Attractive commissions are negotiable, with an excallant quality of leads constantly being generated for you to concentrate activities on. We invest on a major scale at key exhibitions such as the Whitch Computer Show and are essasing new policies related to other trade shows in the distributive products area. Candidates should be expelled of preparing a high quality Management Overview and Case Summary and have the ability to present a sound Susiness Systeme case, emphasising the categorised edventages as business sids for the prospective client user. Equally candidates should have experience of using views leiths and be competent in developing suitable formats to fit individual scenarios. Target earnings will realisticatly be between £20,000 and £35,000 and are factually atteinable. Coops does exist for top high flying new business eleamen with the emphasis upon new business and no out-offs or controls will be imposed for outstanding semings contributors. Network sales are available and, in leat, evidence exists of in-house Projects Managere achieving over £250,000 of sales per ennum on a part-time basis to assist the company. What, therefore, can skilled accompilabed attention, ethnotres products and saling slad and a high quality feval of terminal diviant package demonstration systems. Good reference sites exist inrodynout the UK, often in turn generaling even further business. We work with major manufacturers equipment, including Honeywell and ICL. Developments are also taking place with leading Japanese menutage supports. Separation on systems of our interface and interfaces. Respond for initial meetings and interviews to Bob Tell or John Wood Telephone No. 021-396 0854

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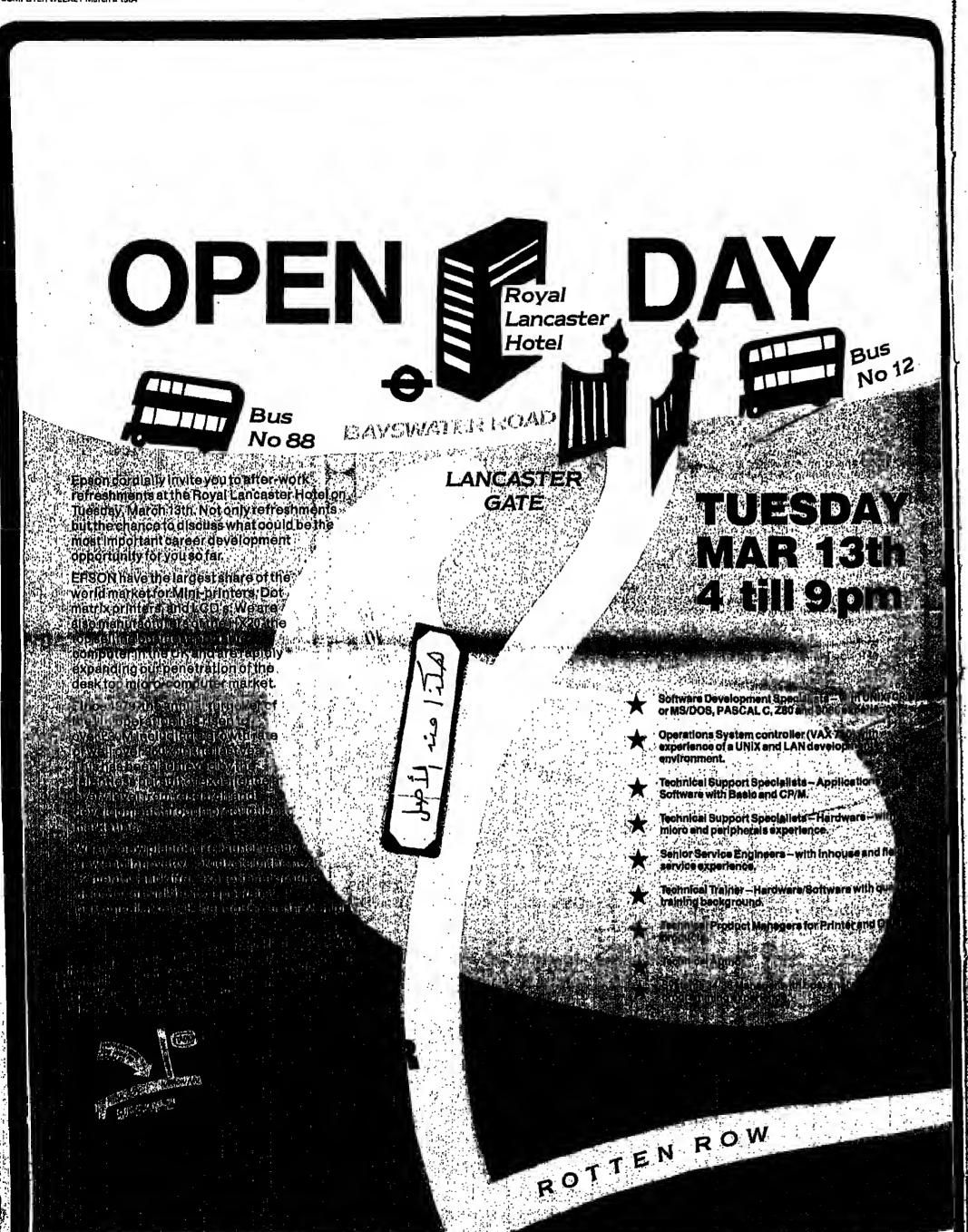
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I SALES BIT

Quality of Management - 86

How to identify the losers in your team

ll' a note of cynicism creeps in this week, it is because most of the column is written from a number of personal experiences over the Unconvincing Expenses: Basi-year that have affected my absolute celly, dishonest losers always make belief in my species. The subject is losers - those people who are al-ways able to snatch defeat from the jaws of victory; those who in-evitably fail you, the sales team and themselves for reasons that are fien socially and ethically unac-

They can come in a variety of forms from the basically inept, through layabnuts, freeloaders, chests, liars, rogues, to outright eriminals. But these labels are invariably applied after the event with the help of hindsight.

What's more, those are regret-fully a replacement of certier labels that could initially have described the person concerned with an array of superletives from "obvious po-tentiel io need of e second chance", through "only needs the right product/company", "some problems, but I can sort them out", to "high flyer/super hero in need of a change!". As a "rule of thumb", the exper-

nature of such quelities is by ex-

tended personal exposure. As my

mum is always telling me: "You don't know people until you live with them".

It is a source of continuing as-

tonishment to me that very few companies go to the trouble of

thoroughly reference-checking po-tential employees. When taxed with such dereliction of duty, the most common excuse is that "the only pertincot reference is the ap-

Licant's current boss and one can-

not reasonably approach him while he is still in that employment."

But why not make the job offer subject to satisfactory references from his present employer once

the job has been taken up? Clearly,

any candidate objecting to such an

comething, and is best avoided.

wrong people are significant, it is likely that at any given time you

are two kinds: honest and dis-honest. While both have many

Here are a few characteristics to

Suspicious Absonce. On occa-

sions, the employee simply fails to show up for work. No fore-warning or even any contact at all he simply disappears. If he does call, the reason is usually some-

thing to do with ill-health Typically, when he does report for duty, his excuse is either very ela-borate of extremely lame.

Continual Bad Luck: Success

manages constantly to stude them. The competition offers dramatic disjoints, special features, faster

watch out for:

delivery and the like. He is never a failure to himself; it is merely that fates are giving him a bad time.

expense claims that do not fall into the common pattern of the rest of the salestorce. Their cers always use more petrol than those of their colleagues, they always get involved in more of those expenses for which one does not normally get a receipt, they lost receipts they have lots of receipts from the same garage in the same (und often

familiar! writing. Bad communicators: Good communications is bad news far people with something tu hide. Losers usually produce sketchy and inconsistent call reports, if they produce them at all.

Exeuses, Excuses: Losers usually heve a vivid imegination; they need it to prolong survival. They are never lost for elaborate excuses whatever the situation.

Dust Raisers: Life is always hectic, rushing around "seeing people" (listielly straight from home or on the way home), makienced recruitment consultant is ing lots of phone calls, writing lots just as likely to get it wrong as the of letters, lots of "working

A growing business like the computer industry gives a lot of scope for "guarantee hoppers" and other types of losers. Sales managers must constantly be on the look-out for such people

The reason is simple: there are no infallible techniques for identifying and qualifying basic human characteristics, like industry, integrity and commonsense. Consecutors in the consecutor in the consecutors in the consecu personal problems from time to quently, it would be a mistake to rely absolutely on the judgment of course, but his wife, or kids, who external recruitment consultants. are dragging him down. So, he really has to spend lots of time The only way to establish the true

sorting it out, or taking the kids to school, and so on. The list of possible symptoms is endless and many of them are not unique to malingerers and scroungers. What is special to the loser is that he always has at least one of them running et any given

feel" is always right. If you suspect one of your subordinates is cheat ing, it's almost certain he is. Insuspicion are but the tip of an iceberg of dishonesty in one manifestation or another. So, act early for delay may allow the problems to drift beyond the company to your clients, putting your hard-earned professional credibility at

Don't allow your judgment to be smnding and altruism for that is the basic sustenance of the loser.

Unfortunately, a growing busihave in your team at least one iloser. The trouble is, how to identify them. ness like the computer industry gives a lot of scope for "guarantee oppers" and other types of losers. : As far as I am concerned there Sales managers must constantly be on the lookout for such people be-cause the price of failing to identify symptoms in common, those of the them can be very high. latter group are usually the more difficult to identify.

Thorough and pertinent reference checking is about as near as you'll come to preventing losers getting on board in the first place, but don't imagine they'll never get into your team - because they

So keep on the lookout Alan Williams

PUZZLE ANSWER I

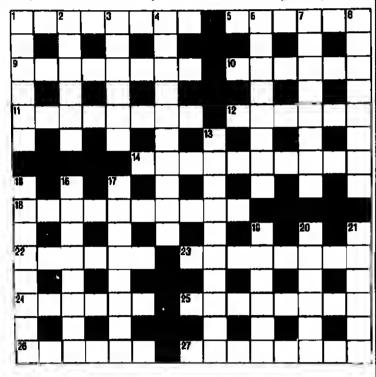
THE three rates of progress are uphill 2 trace, on the level 3ft/sec.

CROSSWORD

Prize Crossword No 50

Compiled by Alec Robins

A prize of £10 will be awarded for the first correct entry opened. The second and third solutions opened will receive £5 each. Entries to Crossword Competition, Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS, by first post Friday, March 16. Please use a ballpoint to complete the crossword, and include telephone number at which you can he reached during the daytime.



(Miss, Mrs, Ms, M

I accept the rules and conditions of the Computer Weekly Crosswor

ACROSS Shrug indifferently about an-cient desh to stake claims (4-4)

5 Dined, tucking into fish, having a protective cover (6)
9 Kente used, oddly, by donr

clan (8)
10 Idiot's expelled from class by a mnn, a man of the cloth (6)
11 Control speed, holding tobog-

gan back (8)

12 Joined by Ireaty, recovered sfter losing leader (6)

14 Albert, perhaps, has to keep an eye on the teant home (5-5)

18 It's not a good sim to dwell in

redrement under canvas (4, 6) 22 One who digs, beginning to disinter a young wriggler (6)

23 Girl showing anxiety about mangy lion (8)
24 Embrace, at a Cambridgeshire

town, very much (6)
25 Seeker of custom grabs one,
blushing and weary (5, 3)
26 Clothes worn by t widow? (6)

27 To abandon an executive. 19 Powerful vessel about to catch plane, for example, is not un-

turf (6)
21 Unit of force, modern, having great weight (6)

Computer Peripherale (Systems) Limited, the exclusive UK distributor of Talex Computer Products 327X terminels and associated equipment are seeking to olgatizative increases its sales force. Solas Exocutives outrently selling to Date Processing Monagers are baing sought in the Home Countles both north, and sough of London and in the Midlends.

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than one easy.

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3. The solution of each puzzle will not dence will be entered into.

RULES AND CONDITIONS pally be published in the laste three weeks after the puzzle has been published.

4. Winners will receive their prizes dur-ing the month following the competition, 5. The decision of the aditor on the in-

l Child's carriage in which as engaging tooth is lifted with skill (2-4)

2 To loll and be thrustful abou

nothing (6)

3 A flat iron plate with no top?

It's puzzling (6)

4 Abbreviated garments causing

beat a source of pollution (3-5)

commercials, pessionate (4-4) Cooversation that's proper

about one acquiring a record

Defamed and made false state-

ments about a beauty end-lessly(8)

up (6) 20 Spots about four loose pieces of

7 Finel part of school year in emost everything (8)

8 Degenerale rotter, ducked river, oot disheartened (8)
Scrutinise naughty ladies, get ting shock (10)

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